Title 296 WAC
LABOR AND INDUSTRIES, DEPARTMENT OF

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Chapter 296-12
PRACTICE AND PROCEDURE--BOARD OF INDUSTRIAL INSURANCE APPEALS

[Rules filed 10/29/69, 10/29/65, 6/12/63, 3/23/60.] Now codified in Title 263 WAC.

Chapter 296-18
INDUSTRIAL INSURANCE AND MEDICAL AID CLASSIFICATION MANUAL

Reviser's note: The classification of occupations was enacted by the legislature as section 1, chapter 247, Laws of 1947. They were revised by the director from time to time under the authority of RCW 51.12.030, 51.12.040, and 51.16.100. As so revised, they were reenacted by the legislature as chapter 51.20 RCW, which was part of chapter 23, Laws of 1961, which reenacted the entire industrial insurance law as Title 51 RCW. The classification as originally published in the WAC conforms to the 1961 statute. The effective date of chapter 23, Laws of 1961 was February 14, 1961.

Chapter 51.20 RCW and its parallels in chapter 231, Laws of 1961, have subsequently been repealed by section 39, chapter 93, Laws of 1972 ex. sess.

Sections 296-18-010, 296-18-020, 296-18-050, 296-18-060, 296-18-070, 296-18-080, 296-18-090, 296-18-100, 296-18-110, 296-18-130, 296-18-140, 296-18-150, 296-18-160, 296-18-170, 296-18-180, 296-18-210, 296-18-220, 296-18-240, 296-18-290, 296-18-310, 296-18-330, 296-18-350, 296-18-370, 296-18-380, 296-18-390, 296-18-400, 296-18-410, 296-18-420, 296-18-430, 296-18-440, 296-18-450, 296-18-460, 296-18-470, 296-18-480, 296-18-490, 296-18-500, 296-18-610, 296-18-620, 296-18-630, 296-18-640, 296-18-650, 296-18-660. [Order 71-14, §§ 296-18-010 thru 296-18-660, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-340 [Order 70-11, § 296-18-340, filed 11/30/70.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-18-600 [See reviser's note for history.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-18-670 [Order 72-12, § 296-18-670, filed 7/18/72; Order 71-14, § 296-18-670, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-680 [Order 72-12, § 296-18-680, filed 7/18/72; Order 71-14, § 296-18-680, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

296-18-690 [Order 71-14, § 296-18-690, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. See chapter 296-17 WAC.

Reviser's note: Many of the above section numbers were reused by the department when it adopted rules on rehabilitation review, a new subject matter, by Order 82-40, filed 11/30/82. This order and subsequent orders have been codified as chapter 296-18A WAC.

Chapter 296-19
CLASSIFICATION OF STATE EMPLOYEES

296-19-010 General order. [Rule, filed 4/10/62; Rules, filed 12/2/60 and 3/6/61.] Repealed by 84-06-018 (Order 84-3), filed 2/29/84. Statutory Authority: RCW 51.04.020(1).

Chapter 296-25
SAFETY STANDARDS--GENERAL

Sections 296-25-005, 296-25-010, 296-25-020, 296-25-030, 296-25-040, 296-25-050, 296-25-060, 296-25-070, 296-25-080, 296-25-090, 296-25-100, 296-25-110, 296-25-120, 296-25-130, 296-25-140, 296-25-200, 296-25-205, 296-25-210, 296-25-215, 296-25-220, 296-25-225, 296-25-230, 296-25-235, 296-25-240, 296-25-245, 296-25-250, 296-25-255, 296-25-260, 296-25-265, 296-25-270, 296-25-275, 296-25-280, 296-25-285, 296-25-290, 296-25-295, 296-25-300, 296-25-305, 296-25-310, 296-25-315, 296-25-320, 296-25-325, 296-25-330, 296-25-335, 296-25-340, 296-25-345, 296-25-350, 296-25-355, 296-25-360, 296-25-365, 296-25-370, 296-25-375, 296-25-380, 296-25-385, 296-25-390, 296-25-395, 296-25-400, 296-25-405, 296-25-410, 296-25-415, 296-25-420, 296-25-425, 296-25-430, 296-25-435, 296-25-440, 296-25-445, 296-25-450, 296-25-455, 296-25-460, 296-25-465, 296-25-470, 296-25-475, 296-25-480, 296-25-485, 296-25-490, 296-25-495, 296-25-500, 296-25-505, 296-25-510, 296-25-515, 296-25-520, 296-25-525, 296-25-530, 296-25-535, 296-25-540, 296-25-545, 296-25-550, 296-25-555, 296-25-560, 296-25-565, 296-25-570, 296-25-575, 296-25-580, 296-25-585, 296-25-590, 296-25-595, 296-25-600, 296-25-605, 296-25-610, 296-25-615, 296-25-620, 296-25-625, 296-25-630, 296-25-635, 296-25-640, 296-25-645, 296-25-650, 296-25-655, 296-25-660, 296-25-665, 296-25-670, 296-25-675, 296-25-680, 296-25-685, 296-25-690, 296-25-695, 296-25-700, 296-25-705, 296-25-710, 296-25-715, 296-25-720, 296-25-725, 296-25-730, 296-25-735, 296-25-740, 296-25-745, 296-25-750, 296-25-755, 296-25-760, 296-25-765, 296-25-770, 296-25-775, 296-25-780, 296-25-785, 296-25-790, 296-25-795, 296-25-800, 296-25-805, 296-25-810, 296-25-815, 296-25-820, 296-25-825, 296-25-830, 296-25-835, 296-25-840, 296-25-845, 296-25-850, 296-25-855, 296-25-860, 296-25-865, 296-25-870, 296-25-875, 296-25-880, 296-25-885, 296-25-890, 296-25-895, 296-25-900, 296-25-905, 296-25-910, 296-25-915, 296-25-920, 296-25-925, 296-25-930, 296-25-935, 296-25-940, 296-25-945, 296-25-950, 296-25-955, 296-25-960, 296-25-965, 296-25-970, 296-25-975. [Standards 1-152, filed 3/23/60.] Repeal of chapter 296-25 WAC was declared by Order 74-27, filed 5/7/74 to be effective upon the effective date of amendments to chapter 296-24 WAC set forth as part of this order. See chapter 296-24 WAC.

Chapter 296-26
LABOR CAMP RULES

296-26-010 Definitions. [Rule .60.010, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-020 Administration. [Rule .60.020, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-030 Water supply. [Rule .60.030, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-040 Sewage and liquid waste disposal—Existing and new construction. [Rule .60.040, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-050 Plumbing—Existing and new construction. [Rule .60.050, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-060 Refuse disposal—Existing and new construction. [Rule .60.060, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-070 Rodent and insect control—Existing and new construction. [Rule .60.070, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-080 Location and maintenance—Existing and new construction. [Rule .60.080, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-090 Construction and maintenance of dwelling units. [Rule .60.090, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-100 Ventilation. [Rule .60.100, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-110 Heating—Existing and new construction. [Rule .60.110, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-120 Lighting. [Rule .60.120, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-130 Toilet, handwashing, bathing, and laundry facilities—Existing and new construction. [Rule .60.130, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-140 Foodhandling facilities—Existing and new construction. [Rule .60.140, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-150 Beds and bedding—Existing and new construction. [Rule .60.150, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-160 Supervision and responsibility. [Rule .60.160, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-170 Communicable disease. [Rule .60.170, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

296-26-180 Effective date. [Rule .60.180, filed 3/29/61.] Repealed by Order 75-10, filed 4/4/75.

Chapter 296-38
CULINARY WORKERS SAFETY RULES

296-38-010 General requirements. [Rule 1.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-020 Equipment—Machinery. [Rule 2.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-030 Fire protection and prevention. [Rule 3.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-040 General working conditions. [Rules 4.010-4.040, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

296-38-050 Illumination. [Rule 5.010, filed 8/26/63.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-40
SAFETY STANDARDS--CONSTRUCTION WORK

Sections 296-40-010, 296-40-015, 296-40-020, 296-40-030, 296-40-035, 296-40-040, 296-40-045, 296-40-050, 296-40-055, 296-40-060, 296-40-065, 296-40-070, 296-40-075, 296-40-080, 296-40-085, 296-40-090, 296-40-095, 296-40-100, 296-40-105, 296-40-110, 296-40-115, 296-40-120, 296-40-125, 296-40-130, 296-40-135, 296-40-140, 296-40-145, 296-40-150, 296-40-155, 296-40-160, 296-40-165, 296-40-170, 296-40-175, 296-40-180, 296-40-185, 296-40-190, 296-40-195, 296-40-200, 296-40-205, 296-40-210, 296-40-215, 296-40-220, 296-40-225, 296-40-230, 296-40-235, 296-40-240, 296-40-245, 296-40-250, 296-40-255, 296-40-260, 296-40-265, 296-40-270, 296-40-275, 296-40-280, 296-40-285, 296-40-290, 296-40-295, 296-40-300, 296-40-310, 296-40-320, 296-40-330, 296-40-350, 296-40-360, 296-40-365, 296-40-370, 296-40-375, 296-40-380, 296-40-385, 296-40-390, 296-40-395, 296-40-400, 296-40-410, 296-40-415, 296-40-420, 296-40-425, 296-40-430, 296-40-435, 296-40-440, 296-40-450, 296-40-460, 296-40-470, 296-40-480, 296-40-490, 296-40-500, 296-40-510, 296-40-520, 296-40-530, 296-40-540, 296-40-550, 296-40-560, 296-40-570, 296-40-580, 296-40-590, 296-40-600, 296-40-610, 296-40-620, 296-40-630, 296-40-640, 296-40-650, 296-40-660, 296-40-665, 296-40-670, 296-40-675, 296-40-680, 296-40-685, 296-40-690, 296-40-695, 296-40-700, 296-40-705, 296-40-710, 296-40-715, 296-40-720, 296-40-725, 296-40-730, 296-40-735, 296-40-740, 296-40-745, 296-40-750, 296-40-755, 296-40-760, 296-40-765, 296-40-770, 296-40-780, 296-40-790, 296-40-795, 296-40-800, 296-40-810, 296-40-820, 296-40-825, 296-40-830, 296-40-835, 296-40-840, 296-40-845, 296-40-850, 296-40-855, 296-40-860, 296-40-865, 296-40-870, 296-40-875, 296-40-880, 296-40-890, Appendix 1 Traffic control signs; Appendix 2 Sheet piling, shoring and bracing; and Appendix 3 Scaffolds. [Book entitled "Safety Standards for Construction Work" chapter 296-40 WAC, filed 3/23/60.] Repealed by Order 74-26, filed 5/7/74. For later promulgation, see chapter 296-155 WAC.

296-40-412 [Order 74-1, filed 1/8/74.] Repealed by Order 74-26, filed 5/7/74 before codification in the Washington Administrative Code, see chapter 296-155 WAC, Safety standards for construction work adopted by Order 74-26, filed 5/7/74.

Chapter 296-41
LIQUEFIED PETROLEUM GASES

The Standards for the Storage and Handling of Liquefied Petroleum Gases, N.B.F.U. #58, filed 3/29/61 was repealed by Order 76-28, filed 9/28/76.

Chapter 296-42
PETROLEUM--REFINING, TRANSPORTATION AND HANDLING

296-42-010 Application, scope and permits for variations from orders. [§ I, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-020 Definitions. [§ 2, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-030 Accident prevention program. [Rules 3.010-3.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-040 First aid. [Rule 4.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-050 Fire and explosions—Smoking, matches, lighters. [Rule 5.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-060 Fire and explosions—Fire protection and fire fighting equipment. [Rule 5.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-070 Fire and explosions—Cleaning oils. [Rule 5.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-080 Fire and explosions—Static electricity. [Rule 5.040, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-090 Fire and explosions—Spontaneous ignition. [Rule 5.050, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-100 Fire and explosions—Fire permits. [Rule 5.060, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-110 Fire and explosions—Surge tanks. [Rule 5.070, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-120 Fire and explosions—Flammable waste gases or vapors. [Rule 5.080, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-130 Fire and explosions—Transfer of light oils by air displacement. [Rule 5.090, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-140 Fire and explosions—Steam hose. [Rule 5.100, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-150 Dangerous exposure. [Rules 6.010 and 6.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-160 Enclosed and confined spaces—Ventilation. [Rule 7.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-170 Enclosed and confined spaces—Confined spaces. [Rule 7.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-180 Escape exits. [Rule 8.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-200 Tanks—Stationary tanks. [Rule 9.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-210 Tanks—Stationary tank maintenance. [Rule 9.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-220 Tanks—Diversion and retaining walls. [Rule 9.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-230 Gas and vapor testing. [Rule 10.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-240 Opening and blinding pipe lines and equipment—Opening pipe lines and equipment. [Rule 11.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-250 Opening and blinding pipe lines and equipment—Blinding of pipe lines and equipment. [Rule 11.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-260 Hazardous commodities—General. [Rule 12.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-270 Hazardous commodities—Corrosives. [Rule 12.020, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-280 Hazardous commodities—Leaded gasoline stationary tanks. [Rule 12.030, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-290 Drainage. [Rule 13.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-300 Agitation and heating of liquids in tanks. [Rule 14.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-310 Process equipment maintenance—General. [Rule 15.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-320 Process equipment maintenance—Condenser and cooling boxes. [Rule 15.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-330 Pumps, pipe lines and valves—Pumps. [Rule 16.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-340 Pumps, pipe lines and valves—Pipe lines and piping. [Rule 16.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-350 Pumps, pipe lines and valves—Valves. [Rule 16.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-360 Equipment leakage and breakage—Leakage control. [Rule 17.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-370 Equipment leakage and breakage—Gage glasses. [Rule 17.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-380 Equipment identification. [Rule 18.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-390 Gas compressors and engines—Gas compressor or gas processing plant protection. [Rule 19.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-400 Gas compressors and engines—Gas compressors. [Rule 19.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-410 Gas compressors and engines—Stationary internal combustion engines. [Rule 19.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-420 Loading and unloading facilities and operations—Loading platforms. [Rule 20.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-430 Loading and unloading facilities and operations—Loading and unloading operations. [Rule 20.020, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-440 Loading and unloading facilities and operations—Liquefied petroleum gases—Loading and unloading. [Rule 20.030, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-450 Laboratories and pilot plants. [Rule 21.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-460 Wharves. [Rule 22.010, filed 1/11/63.] Repealed by Order 76-28, filed 9/28/76.

296-42-470 Bulk distributing plants. [Rule 23.010, filed 1/11/63 and 1/15/63.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-48
MOBILE HOMES, COMMERCIAL COACHES AND RECREATIONAL VEHICLES

296-48-005 Administrative—Authority for mobile home code. [Order 76-26, § 296-48-005, filed 8/23/76; Order 75-20, § 296-48-005, filed 7/16/75; Order 70-2, § 296-48-005, filed 4/27/70; Order 68-4, § 296-48-005, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-010 Application and scope. [Order 76-26, § 296-48-010, filed 8/23/76; Order 75-40, § 296-48-010, filed 12/4/75; Order 75-20, § 296-48-010, filed 7/16/75; Order 70-10, § 296-48-010, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-010, filed 4/27/70; Order 68-4, § 296-48-010, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-011 Conditions of reciprocity. [Order 74-11, § 296-48-011, filed 4/8/74; Order 73-14, § 296-49-001, filed 7/31/73. Formerly WAC 296-49-001 and 296-49-011.] Repealed by Order 76-26, filed 8/23/76.

296-48-012 Agreements with out-of-state jurisdictions. [Order 73-14, § 296-48-012, filed 7/31/73. Formerly WAC 296-49-012.] Repealed by Order 76-26, filed 8/23/76.

296-48-020 Alteration of mobile homes. [Order 76-26, § 296-48-020, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-050 General. [Order 70-2, § 296-48-050, filed 4/27/70; Order 68-4, § 296-48-050, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-051 Definitions. [Order 76-26, § 296-48-051, filed 8/23/76; Order 75-20, § 296-48-051, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-055 Alteration or conversion. [Order 70-10, § 296-48-055, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-055, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-060 Approved. [Order 68-4, § 296-48-060, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-063 Approved listing agency. [Order 70-10, § 296-48-063, filed 9/17/70, effective 1/1/71.] Repealed by Order 75-20, filed 7/16/75.

296-48-065 Approved testing agency. [Order 70-10, § 296-48-065, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-065, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-066 Camping trailer. [Order 70-2, § 296-48-066, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-070 Dealer. [Order 70-2, § 296-48-070, filed 4/27/70; Order 68-4, § 296-48-070, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-075 Department. [Order 70-2, § 296-48-075, filed 4/27/70; Order 68-4, § 296-48-075, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-080 Equipment. [Order 70-10, § 296-48-080, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-080, filed 4/27/70; Order 68-4, § 296-48-080, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-085 Field technical service. [Order 68-4, § 296-48-085, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-090 Insignia. [Order 70-2, § 296-48-090, filed 4/27/70; Order 68-4, § 296-48-090, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-095 Installations. [Order 70-10, § 296-48-095, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-095, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-100 Labeled. [Order 68-4, § 296-48-100, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-105 Length of vehicles. [Order 68-4, § 296-48-105, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-110 Listed. [Order 68-4, § 296-48-110, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-115 Mobile home. [Order 70-2, § 296-48-115, filed 4/27/70; Order 68-4, § 296-48-115, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-120 Vehicle—Expandable. [Order 68-4, § 296-48-120, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-125 Vehicle—Multiple. [Order 68-4, § 296-48-125, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-130 Model. [Order 70-10, § 296-48-130, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-130, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-135 Model change. [Order 68-4, § 296-48-135, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-140 Model—Group. [Order 68-4, § 296-48-140, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-145 Prohibited sales notice. [Order 68-4, § 296-48-145, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-150 Commercial coach. [Order 70-2, § 296-48-150, filed 4/27/70; Order 68-4, § 296-48-150, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-151 Travel trailer. [Order 68-4, § 296-48-151, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-155 Recreational vehicle. [Order 70-2, § 296-48-155, filed 4/27/70; Order 68-4, § 296-48-155, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-156 Travel trailer. [Order 70-2, § 296-48-156, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-158 Truck camper. [Order 70-2, § 296-48-158, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-160 Vehicle. [Order 70-2, § 296-48-160, filed 4/27/70; Order 68-4, § 296-48-160, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-165 Vehicle—Self contained. [Order 70-2, § 296-48-165, filed 4/27/70.] Repealed by Order 75-20, filed 7/16/75.

296-48-200 Air gap. [Order 68-4, § 296-48-200, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-205 Combination compartment. [Order 68-4, § 296-48-205, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-210 Common vent. [Order 68-4, § 296-48-210, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-215 Continuous vent. [Order 68-4, § 296-48-215, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-220 Critical level. [Order 68-4, § 296-48-220, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-225 Diameter. [Order 68-4, § 296-48-225, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-230 Drain coupler. [Order 68-4, § 296-48-230, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-235 Drain outlet. [Order 68-4, § 296-48-235, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-240 Drainage system. [Order 68-4, § 296-48-240, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-245 Flush tank. [Order 68-4, § 296-48-245, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-250 Flush valve. [Order 68-4, § 296-48-250, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-255 Flushometer valve. [Order 68-4, § 296-48-255, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-260 Horizontal pipe. [Order 68-4, § 296-48-260, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-265 Individual vent. [Order 68-4, § 296-48-265, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-270 Longitudinal center. [Order 68-4, § 296-48-270, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-275 Main drain. [Order 68-4, § 296-48-275, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-280 Main vent. [Order 68-4, § 296-48-280, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-285 Plumbing fixture. [Order 68-4, § 296-48-285, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-290 Toilet-mechanical seal. [Order 68-4, § 296-48-290, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-295 Toilet-recirculating chemical. [Order 68-4, § 296-48-295, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-300 Toilet-water flush. [Order 68-4, § 296-48-300, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-305 Trap. [Order 68-4, § 296-48-305, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-310 Trap arm. [Order 68-4, § 296-48-310, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-315 Trap seal. [Order 68-4, § 296-48-315, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-320 Vent system. [Order 68-4, § 296-48-320, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-325 Vertical pipe. [Order 68-4, § 296-48-325, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-330 Waste-holding tank. [Order 68-4, § 296-48-330, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-335 Water distribution system. [Order 68-4, § 296-48-335, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-340 Water supply connection. [Order 68-4, § 296-48-340, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-345 Water storage tank. [Order 68-4, § 296-48-345, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-350 Wet vent. [Order 68-4, § 296-48-350, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-355 Wet-vented drainage system. [Order 68-4, § 296-48-355, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

HEAT PRODUCING

296-48-400 Anti-flooding device. [Order 68-4, § 296-48-400, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-405 Appliance branch piping. [Order 68-4, § 296-48-405, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-410 Appliance compartment. [Order 68-4, § 296-48-410, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-415 Automatic pilot device. [Order 68-4, § 296-48-415, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-420 Automatic pump (oil lifter). [Order 68-4, § 296-48-420, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-425 BTUH. [Order 68-4, § 296-48-425, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-430 Duct. [Order 68-4, § 296-48-430, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-435 Gas appliance connector. [Order 68-4, § 296-48-435, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-440 Gas piping. [Order 68-4, § 296-48-440, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-445 Gas supply connection. [Order 68-4, § 296-48-445, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-450 Gas supply connector. [Order 68-4, § 296-48-450, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-455 Heat-producing appliance. [Order 68-4, § 296-48-455, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-460 Input rating. [Order 68-4, § 296-48-460, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-465 Main gas piping manifold. [Order 68-4, § 296-48-465, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-470 Oil piping system. [Order 68-4, § 296-48-470, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-475 Roof jack. [Order 68-4, § 296-48-475, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-480 Vent connector. [Order 68-4, § 296-48-480, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-485 Water heater. [Order 68-4, § 296-48-485, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

ELECTRICAL

296-48-500 A.W.G. [Order 68-4, § 296-48-500, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-501 Accessible (as applied to wiring methods). [Order 70-2, § 296-48-501, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-505 Battery circuit. [Order 70-2, § 296-48-505, filed 4/27/70; Order 68-4, § 296-48-505, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-510 Branch circuit panelboard. [Order 70-2, § 296-48-510, filed 4/27/70; Order 68-4, § 296-48-510, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-515 Low-voltage power circuit. [Order 70-2, § 296-48-515, filed 4/27/70; Order 68-4, § 296-48-515, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-520 National Electrical Code (N.E.C.). [Order 70-2, § 296-48-520, filed 4/27/70; Order 68-4, § 296-48-520, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-525 Power supply assembly. [Order 70-2, § 296-48-525, filed 4/27/70; Order 68-4, § 296-48-525, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-526 Concealed. [Order 70-2, § 296-48-526, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-528 Converter. [Order 70-2, § 296-48-528, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-530 D.C. current. [Order 70-2, § 296-48-530, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-535 Dual supply source. [Order 70-2, § 296-48-535, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-540 Laundry area. [Order 70-2, § 296-48-540, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-545 Transformer. [Order 70-2, § 296-48-545, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

STRUCTURAL DEFINITIONS

296-48-550 Ceiling height. [Order 70-10, § 296-48-550, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-551 Definitions. [Order 73-17, § 296-48-551, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-555 Construction. [Order 70-10, § 296-48-555, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-560 Dead load. [Order 70-10, § 296-48-560, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-562 Dormitory. [Order 70-10, § 296-48-562, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-565 Dwelling unit. [Order 70-10, § 296-48-565, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-568 Exit. [Order 70-10, § 296-48-568, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-570 Fire safety. [Order 70-10, § 296-48-570, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-572 Superficial floor area. [Order 70-10, § 296-48-572, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-574 Guest room. [Order 70-10, § 296-48-574, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.]

296-48-576 Habitable room. [Order 70-10, § 296-48-576, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-577 Interior finish. [Order 70-10, § 296-48-577, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-578 Kitchen. [Order 70-10, § 296-48-578, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-580 Live load. [Order 70-10, § 296-48-580, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-582 Multiple dwelling unit. [Order 70-10, § 296-48-582, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-584 Occupancy. [Order 70-10, § 296-48-584, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-588 Wall—Bearing. [Order 70-10, § 296-48-588, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-590 Wall—Exterior. [Order 70-10, § 296-48-590, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-592 Wall—Nonbearing. [Order 70-10, § 296-48-592, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-594 Wall—Parapet. [Order 70-10, § 296-48-594, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-596 Wind load. [Order 70-10, § 296-48-596, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-598 Window. [Order 70-10, § 296-48-598, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

296-48-600 Enforcement. [Order 76-26, § 296-48-600, filed 8/23/76; Order 75-20, § 296-48-600, filed 7/16/75; Order 70-10, § 296-48-600, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-600, filed 4/27/70; Order 68-4, § 296-48-600, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-602 State enforcement of federal rules and regulations. [Order 76-26, § 296-48-602, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-604 Limited application of remaining sections. [Order 76-26, § 296-48-604, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-605 Equipment and installations. [Order 75-20, § 296-48-605, filed 7/16/75; Order 70-10, § 296-48-605, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-605, filed 4/27/70; Order 68-4, § 296-48-605, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-610 Department disapproval of listed or labeled equipment and installations. [Order 75-20, § 296-48-610, filed 7/16/75; Order 68-4, § 296-48-610, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-615 Approval of alternates and equivalents. [Order 75-20, § 296-48-615, filed 7/16/75; Order 70-10, § 296-48-615, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-615, filed 4/27/70; Order 68-4, § 296-48-615, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-620 Manufacturer's approval. [Order 75-20, § 296-48-620, filed 7/16/75; Order 68-4, § 296-48-620, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-625 Required inspection. [Order 75-20, § 296-48-625, filed 7/16/75; Order 70-2, § 296-48-625, filed 4/27/70; Order 68-4, § 296-48-625, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-630 Inspection approval. [Order 75-20, § 296-48-630, filed 7/16/75; Order 70-10, § 296-48-630, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-630, filed 4/27/70; Order 68-4, § 296-48-630, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-635 Notice of violations. [Order 75-20, § 296-48-635, filed 7/16/75; Order 68-4, § 296-48-635, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-636 Complaint investigation. [Order 75-20, § 296-48-636, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-640 Action after requested inspection. [Order 68-4, § 296-48-640, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-645 Field technical service. [Order 75-20, § 296-48-645, filed 7/16/75; Order 68-4, § 296-48-645, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-700 Application for plan approval. [Order 68-4, § 296-48-700, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-701 Application for structural system approval. [Order 75-20, § 296-48-701, filed 7/16/75; Order 70-10, § 296-48-701, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-702 Application for electrical, mechanical and plumbing system approval. [Order 75-20, § 296-48-702, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-703 Application for model plan approval. [Order 75-20, § 296-48-703, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-704 Application for in-plant quality control manual approval. [Order 75-20, § 296-48-704, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-705 Plan and specification requirements. [Order 70-10, § 296-48-705, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-705, filed 4/27/70; Order 68-4, § 296-48-705, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-706 Calculations and test procedure. [Order 75-20, § 296-48-706, filed 7/16/75; Order 70-10, § 296-48-706, filed 9/17/70, effective 1/1/71.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-710 Model manufactured in more than one location. [Order 75-20, § 296-48-710, filed 7/16/75; Order 68-4, § 296-48-710, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-715 Out-of-state applicant. [Order 75-20, § 296-48-715, filed 7/16/75; Order 68-4, § 296-48-715, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-720 Nonconforming application and plans. [Order 70-2, § 296-48-720, filed 4/27/70; Order 68-4, § 296-48-720, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-725 Evidence of department's approval. [Order 75-20, § 296-48-725, filed 7/16/75; Order 68-4, § 296-48-725, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-730 Plan approval expiration. [Order 75-20, § 296-48-730, filed 7/16/75; Order 71-11, § 296-48-730, filed 10/8/71; Order 70-2, § 296-48-730, filed 4/27/70; Order 68-4, § 296-48-730, filed 5/31/68; effective

7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-735 In-plant quality control. [Order 75-20, § 296-48-735, filed 7/16/75; Order 70-10, § 296-48-735, filed 9/17/70, effective 1/1/71; Order 68-4, § 296-48-735, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-740 Changes to approved plans. [Order 75-20, § 296-48-740, filed 7/16/75; Order 70-10, § 296-48-740, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-740, filed 4/27/70; Order 68-4, § 296-48-740, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-745 Change of ownership. [Order 68-4, § 296-48-745, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-750 Change of name or address. [Order 68-4, § 296-48-750, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-755 Discontinuance of manufacture. [Order 68-4, § 296-48-755, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-760 Vehicle identification. [Order 75-20, § 296-48-760, filed 7/16/75; Order 70-2, § 296-48-760, filed 4/27/70; Order 68-4, § 296-48-760, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-761 Labels for exterior locations. [Order 75-20, § 296-48-761, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-765 Insignia required. [Order 75-20, § 296-48-765, filed 7/16/75; Order 68-4, § 296-48-765, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-770 Insignia not required. [Order 75-20, § 296-48-770, filed 7/16/75; Order 68-4, § 296-48-770, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-775 Application for insignia pursuant to plan approval. [Order 75-20, § 296-48-775, filed 7/16/75; Order 70-2, § 296-48-775, filed 4/27/70; Order 68-4, § 296-48-775, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-776 Application for insignia pursuant to requested inspection. [Order 75-20, § 296-48-776, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-780 Alteration or conversion. [Order 75-20, § 296-48-780, filed 7/16/75; Order 70-10, § 296-48-780, filed 9/17/70, effective 1/1/71; Order 68-4 § 296-48-780, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-781 Not applicable. [Order 75-20, § 296-48-781, filed 7/16/75; Order 68-4, § 296-48-781, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-782 Application requirements. [Order 75-20, § 296-48-782, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-785 Denial of insignia. [Order 68-4, § 296-48-785, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-790 Insignia removal. [Order 75-20, § 296-48-790, filed 7/16/75; Order 68-4, § 296-48-790, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-795 Lost or damaged insignia. [Order 75-20, § 296-48-795, filed 7/16/75; Order 68-4, § 296-48-795, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-800 Fees. [Order 77-5, § 296-48-800, filed 4/6/77; Order 76-26, § 296-48-800, filed 8/23/76; Order 75-20, § 296-48-800, filed 7/16/75; Order 70-10, § 296-48-800, filed 9/17/70, effective 1/1/71; Order 70-2, § 296-48-800, filed 4/27/70; Order 68-4, § 296-48-800, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-825 Public hearing. [Order 68-4, § 296-48-825, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-830 Aggrievance hearing request. [Order 68-4, § 296-48-830, filed 5/31/68, effective 7/1/68.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-890 Appendix—ANSI A119.1—Copies. [Order 76-26, Appendix (codified as WAC 296-48-890), filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48-905 Minimum standards. [Order 70-2, § 296-48-905, filed 4/27/70; Order 68-4, § 296-48-905, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-910 Rodent proofing. [Order 68-4, § 296-48-910, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-915 Prohibited fittings and practices. [Order 68-4, § 296-48-915, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-920 Alignment of fittings. [Order 68-4, § 296-48-920, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-930 Standards for equipment and installations. [Order 70-2, § 296-48-930, filed 4/27/70; Order 68-4, § 296-48-930, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-940 Strains and stresses. [Order 68-4, § 296-48-940, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-950 Tightness. [Order 68-4, § 296-48-950, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-955 Threaded joints. [Order 68-4, § 296-48-955, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-960 Solder joints. [Order 68-4, § 296-48-960, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-965 Plastic pipe and fittings. [Order 68-4, § 296-48-965, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

DRAINAGE SYSTEMS

296-48-1005 Pipe. [Order 68-4, § 296-48-1005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1011 Fittings. [Order 68-4, § 296-48-1010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1011.] Repealed by Order 76-26, filed 8/23/76.

296-48-1021 Location. [Order 70-2, § 296-48-1021, filed 4/27/70; Order 68-4, § 296-48-1020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1021.] Repealed by Order 76-26, filed 8/23/76.

296-48-1025 Cap or plug. [Order 68-4, § 296-48-1025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1031 Clearance from drain outlet. [Order 68-4, § 296-48-1030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1031.] Repealed by Order 76-26, filed 8/23/76.

296-48-1035 Drain couplers and caps. [Order 68-4, § 296-48-1035, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1041 Drain outlet size. [Order 70-2, § 296-48-1041, filed 4/27/70; Order 68-4, § 296-48-1040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1041.] Repealed by Order 76-26, filed 8/23/76.

296-48-1051 Fixture load. [Order 68-4, § 296-48-1050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1051.] Repealed by Order 76-26, filed 8/23/76.

296-48-1055 Wet-vented drainage system. [Order 70-2, § 296-48-1055, filed 4/27/70; Order 68-4, § 296-48-1055, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1061 Side-vent drainage system. [Order 70-2, § 296-48-1061, filed 4/27/70; Order 68-4, § 296-48-1060, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1061.] Repealed by Order 75-20, filed 7/16/75.

296-48-1071 Changes in direction. [Order 68-4, § 296-48-1070, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1071.] Repealed by Order 76-26, filed 8/23/76.

296-48-1075 Grade of horizontal drainage piping. [Order 68-4, § 296-48-1075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1081 Waste holding tank. [Order 70-2, § 296-48-1081, filed 4/27/70; Order 68-4, § 296-48-1080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1081.] Repealed by Order 75-20, filed 7/16/75.

296-48-1082 Detachable waste holding system. [Order 71-11, § 296-48-1082, filed 10/8/71.] Repealed by Order 75-20, filed 7/16/75.

TRAPS AND CLEANOUTS

296-48-1101 Traps required. [Order 68-4, § 296-48-1100, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1101.] Repealed by Order 76-26, filed 8/23/76.

296-48-1105 Dual fixtures. [Order 70-2, § 296-48-1105, filed 4/27/70; Order 68-4, § 296-48-1105, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1111 Prohibited traps. [Order 68-4, § 296-48-1110, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1111.] Repealed by Order 76-26, filed 8/23/76.

296-48-1115 Material and design. [Order 68-4, § 296-48-1115, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1121 Trap seal. [Order 68-4, § 296-48-1120, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1121.] Repealed by Order 76-26, filed 8/23/76.

296-48-1125 Size. [Order 68-4, § 296-48-1125, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1131 Location. [Order 68-4, § 296-48-1130, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1131.] Repealed by Order 76-26, filed 8/23/76.

296-48-1135 Distance from trap to vent. [Order 68-4, § 296-48-1135, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1141 Length of tailpiece. [Order 68-4, § 296-48-1140, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1141.] Repealed by Order 76-26, filed 8/23/76.

296-48-1151 Grade of trap arm. [Order 68-4, § 296-48-1150, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1151.] Repealed by Order 76-26, filed 8/23/76.

296-48-1155 Trap arm offset. [Order 68-4, § 296-48-1155, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1161 Concealed traps. [Order 68-4, § 296-48-1160, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1161.] Repealed by Order 76-26, filed 8/23/76.

296-48-1165 Protection. [Order 68-4, § 296-48-1165, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1175 Location of cleanout fittings. [Order 68-4, § 296-48-1175, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1181 Access to cleanouts. [Order 68-4, § 296-48-1180, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1181.] Repealed by Order 76-26, filed 8/23/76.

296-48-1185 Material. [Order 68-4, § 296-48-1185, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1191 Design. [Order 68-4, § 296-48-1190, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1191.] Repealed by Order 76-26, filed 8/23/76.

VENTS AND VENTING

296-48-1201 General. [Order 68-4, § 296-48-1200, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1201.] Repealed by Order 76-26, filed 8/23/76.

296-48-1205 Pipe. [Order 68-4, § 296-48-1205, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1211 Fittings. [Order 68-4, § 296-48-1210, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1211.] Repealed by Order 76-26, filed 8/23/76.

296-48-1215 Main vent. [Order 68-4, § 296-48-1215, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1221 Combination compartment. [Order 68-4, § 296-48-1221, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1221.] Repealed by Order 75-20, filed 7/16/75.

296-48-1225 Individual vents. [Order 70-2, § 296-48-1225, filed 4/27/70; Order 68-4, § 296-48-1225, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1231 Common vent. [Order 68-4, § 296-48-1230, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1231.] Repealed by Order 76-26, filed 8/23/76.

296-48-1235 Intersecting vents. [Order 68-4, § 296-48-1235, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1241 Horizontal vents. [Order 68-4, § 296-48-1240, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1241.] Repealed by Order 76-26, filed 8/23/76.

296-48-1245 Grade. [Order 68-4, § 296-48-1245, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1251 Roof extension. [Order 68-4, § 296-48-1250, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1251.] Repealed by Order 76-26, filed 8/23/76.

296-48-1255 Flashing. [Order 68-4, § 296-48-1255, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

WATER DISTRIBUTION SYSTEM

296-48-1305 Piping material. [Order 68-4, § 296-48-1305, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1311 Fittings. [Order 68-4, § 296-48-1310, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1311.] Repealed by Order 76-26, filed 8/23/76.

296-48-1315 Prohibited materials. [Order 68-4, § 296-48-1315, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1325 Screw pipe. [Order 68-4, § 296-48-1325, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1331 Solder fittings. [Order 68-4, § 296-48-1330, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1331.] Repealed by Order 76-26, filed 8/23/76.

296-48-1335 Flared fittings. [Order 68-4, § 296-48-1335, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1341 Water supply piping. [Order 68-4, § 296-48-1340, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1341.] Repealed by Order 76-26, filed 8/23/76.

296-48-1345 Minimum sizes. [Order 70-2, § 296-48-1345, filed 4/27/70; Order 68-4, § 296-48-1345, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1351 Sizing procedure. [Order 68-4, § 296-48-1350, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1351.] Repealed by Order 76-26, filed 8/23/76.

296-48-1355 Valves. [Order 68-4, § 296-48-1355, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1361 Location. [Order 70-2, § 296-48-1361, filed 4/27/70; Order 68-4, § 296-48-1360, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1361.] Repealed by Order 76-26, filed 8/23/76.

296-48-1365 Prohibited connections. [Order 68-4, § 296-48-1365, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1371 Supply outlets. [Order 68-4, § 296-48-1370, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1371.] Repealed by Order 76-26, filed 8/23/76.

296-48-1375 Appliance connections. [Order 68-4, § 296-46-1375, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1381 Flushometer valves or manually-operated flush valves. [Order 68-4, § 296-48-1380, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1381.] Repealed by Order 76-26, filed 8/23/76.

296-48-1385 Flush tanks. [Order 68-4, § 296-48-1385, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1391 Backflow preventer. [Order 68-4, § 296-48-1390, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1391.] Repealed by Order 75-20, filed 7/16/75.

296-48-1395 Mechanical seal toilet valves. [Order 68-4, § 296-48-1395, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-1405 Relief valves. [Order 70-2, § 296-48-1405, filed 4/27/70; Order 68-4, § 296-48-1405, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1411 Water tanks. [Order 68-4, § 296-48-1410, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1411.] Repealed by Order 76-26, filed 8/23/76.

PLUMBING FIXTURES—GENERAL REQUIREMENTS

296-48-1451 Quality of fixtures. [Order 68-4, § 296-48-1450, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1451.] Repealed by Order 76-26, filed 8/23/76.

296-48-1455 Strainers. [Order 68-4, § 296-48-1455, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1461 Fixture connections. [Order 70-2, § 296-48-1461, filed 4/27/70; Order 68-4, § 296-48-1460, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1461.] Repealed by Order 76-26, filed 8/23/76.

296-48-1465 Drain connections. [Order 68-4, § 296-48-1465, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1471 Concealed connections. [Order 68-4, § 296-48-1470, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1471.] Repealed by Order 76-26, filed 8/23/76.

296-48-1475 Directional fitting. [Order 68-4, § 296-48-1475, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1481 Toilet. [Order 68-4, § 296-48-1480, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1481.] Repealed by Order 76-26, filed 8/23/76.

296-48-1485 Toilet connection. [Order 70-2, § 296-48-1485, filed 4/27/70; Order 68-4, § 296-48-1485, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1491 Shower stalls. [Order 68-4, § 296-48-1490, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1491.] Repealed by Order 76-26, filed 8/23/76.

296-48-1495 Shower and tub enclosures. [Order 68-4, § 296-48-1495, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1501 Dishwashing machines. [Order 68-4, § 296-48-1500, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1501.] Repealed by Order 76-26, filed 8/23/76.

296-48-1505 Clotheswashing machines. [Order 71-11, § 296-48-1505, filed 10/8/71; Order 68-4, § 296-48-1505, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1511 Access. [Order 68-4, § 296-48-1510, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1511.] Repealed by Order 76-26, filed 8/23/76.

296-48-1515 Alignment. [Order 68-4, § 296-48-1515, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1521 Brackets. [Order 68-4, § 296-48-1520, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1521.] Repealed by Order 76-26, filed 8/23/76.

TESTS AND INSPECTION

296-48-1551 Water piping system. [Order 68-4, § 296-48-1550, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1551.] Repealed by Order 76-26, filed 8/23/76.

296-48-1555 Drainage and vent system. [Order 68-4, § 296-48-1555, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1561 Fixtures. [Order 68-4, § 296-48-1560, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1561.] Repealed by Order 76-26, filed 8/23/76.

HEAT-PRODUCING EQUIPMENT AND INSTALLATIONS MATERIALS, APPLIANCES, AND EQUIPMENT

296-48-1601 Standards for appliances and equipment. [Order 68-4, § 296-48-1600, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1601.] Repealed by Order 76-26, filed 8/23/76.

296-48-1605 Capacity of containers. [Order 70-2, § 296-48-1605, filed 4/27/70; Order 68-4, § 296-48-1605, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1611 Construction of containers. [Order 68-4, § 296-48-1610, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1611.] Repealed by Order 76-26, filed 8/23/76.

296-48-1615 Marking of containers. [Order 68-4, § 296-48-1615, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1621 Location and enclosure of containers and systems. [Order 68-4, § 296-48-1620, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1621.] Repealed by Order 76-26, filed 8/23/76.

296-48-1625 Valves, connectors and accessories. [Order 68-4, § 296-48-1625, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1631 Safety devices. [Order 68-4, § 296-48-1630, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1631.] Repealed by Order 76-26, filed 8/23/76.

296-48-1635 Container mounting. [Order 68-4, § 296-48-1635, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1641 System design and service line pressure. [Order 68-4, § 296-48-1640, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1641.] Repealed by Order 76-26, filed 8/23/76.

GAS PIPING SYSTEMS

296-48-1681 General. [Order 70-2, § 296-48-1681, filed 4/27/70; Order 68-4, § 296-48-1680, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1681.] Repealed by Order 76-26, filed 8/23/76.

296-48-1685 Materials. [Order 68-4, § 296-48-1685, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1691 Piping design. [Order 68-4, § 296-48-1690, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1691.] Repealed by Order 76-26, filed 8/23/76.

296-48-1695 Expandable or multiple vehicles. [Order 68-4, § 296-48-1695, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1701 Gas pipe sizing. [Order 68-4, § 296-48-1700, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1701.] Repealed by Order 76-26, filed 8/23/76.

296-48-1705 Joints for gas piping. [Order 68-4, § 296-48-1705, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1711 Joints for tubing. [Order 68-4, § 296-48-1710, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1711.] Repealed by Order 76-26, filed 8/23/76.

296-48-1715 Pipe joint compound. [Order 68-4, § 296-48-1715, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1721 Concealed tubing. [Order 68-4, § 296-48-1720, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1721.] Repealed by Order 76-26, filed 8/23/76.

296-48-1725 Concealed joints. [Order 68-4, § 296-48-1725, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1731 Location of gas supply connection. [Order 70-2, § 296-48-1731, filed 4/27/70; Order 68-4, § 296-48-1730, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1731.] Repealed by Order 76-26, filed 8/23/76.

296-48-1735 Identification of gas supply connections. [Order 68-4, § 296-48-1735, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1741 Gas supply connectors. [Order 68-4, § 296-48-1740, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1741.] Repealed by Order 76-26, filed 8/23/76.

296-48-1745 Appliance connections. [Order 68-4, § 296-48-1745, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1746 Exterior appliance connection. [Order 68-4, § 296-48-1746, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1751 Valves. [Order 68-4, § 296-48-1750, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1751.] Repealed by Order 76-26, filed 8/23/76.

296-48-1755 Gas supply connection cap. [Order 68-4, § 296-48-1755, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1761 Electrical ground. [Order 68-4, § 296-48-1760, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1761.] Repealed by Order 76-26, filed 8/23/76.

296-48-1765 Couplings. [Order 68-4, § 296-48-1765, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1771 Hangers and supports. [Order 68-4, § 296-48-1770, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1771.] Repealed by Order 76-26, filed 8/23/76.

296-48-1775 Testing. [Order 68-4, § 296-48-1775, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1781 Leaks. [Order 68-4, § 296-48-1780, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1781.] Repealed by Order 76-26, filed 8/23/76.

OIL PIPING SYSTEMS

296-48-1801 General. [Order 68-4, § 296-48-1800, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1801.] Repealed by Order 76-26, filed 8/23/76.

296-48-1805 Expandable or multiple vehicles. [Order 68-4, § 296-48-1805, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1811 Materials. [Order 68-4, § 296-48-1810, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1811.] Repealed by Order 76-26, filed 8/23/76.

296-48-1815 Size of oil piping. [Order 68-4, § 296-48-1815, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1821 Joints for oil piping. [Order 68-4, § 296-48-1820, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1821.] Repealed by Order 76-26, filed 8/23/76.

296-48-1825 Pipe joint compound. [Order 68-4, § 296-48-1825, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1831 Couplings. [Order 68-4, § 296-48-1830, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1831.] Repealed by Order 76-26, filed 8/23/76.

296-48-1835 Oil tanks—Installation. [Order 68-4, § 296-48-1835, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1841 Auxiliary oil storage tanks. [Order 68-4, § 296-48-1840, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1841.] Repealed by Order 76-26, filed 8/23/76.

296-48-1845 Tank compartment. [Order 68-4, § 296-48-1845, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1851 Shutoff valve. [Order 68-4, § 296-48-1850, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1851.] Repealed by Order 76-26, filed 8/23/76.

296-48-1855 Fuel oil filter. [Order 68-4, § 296-48-1855, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

HEAT-PRODUCING APPLIANCES

296-48-1901 General. [Order 71-11, § 296-48-1901, filed 10/8/71; Order 68-4, § 296-48-1900, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1901.] Repealed by Order 76-26, filed 8/23/76.

296-48-1902 Gas clothes dryers. [Order 71-11, § 296-48-1902, filed 10/8/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-1905 Vented wall furnace installation. [Order 68-4, § 296-48-1905, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1911 Type of fuel. [Order 68-4, § 296-48-1910, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1911.] Repealed by Order 76-26, filed 8/23/76.

296-48-1921 Vents and venting. [Order 68-4, § 296-48-1920, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1921.] Repealed by Order 76-26, filed 8/23/76.

296-48-1925 Cooking area ventilation. [Order 68-4, § 296-48-1925, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1931 Safety devices—Appliances—Types. [Order 70-2, § 296-48-1931, filed 4/27/70; Order 68-4, § 296-48-1930, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1931.] Repealed by Order 76-26, filed 8/23/76.

296-48-1935 Installation—Appliances—General. [Order 68-4, § 296-48-1935, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1941 Location. [Order 68-4, § 296-48-1940, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1941.] Repealed by Order 76-26, filed 8/23/76.

296-48-1945 Accessibility. [Order 70-2, § 296-48-1945, filed 4/27/70; Order 68-4, § 296-48-1945, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1951 Operating instructions. [Order 68-4, § 296-48-1950, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1951.] Repealed by Order 76-26, filed 8/23/76.

296-48-1955 Clearances—General. [Order 68-4, § 296-48-1955, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1961 Clearances—Ranges. [Order 68-4, § 296-48-1960, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1961.] Repealed by Order 76-26, filed 8/23/76.

AIR DUCTS

296-48-1985 Material. [Order 68-4, § 296-48-1985, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-1991 Construction and installation. [Order 68-4, § 296-48-1990, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-1991.] Repealed by Order 76-26, filed 8/23/76.

296-48-1995 Expandable or multiple vehicles. [Order 68-4, § 296-48-1995, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2001 Sizing of ducts. [Order 68-4, § 296-48-2000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2001.] Repealed by Order 76-26, filed 8/23/76.

296-48-2011 Airtightness of supply duct system. [Order 68-4, § 296-48-2010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2011.] Repealed by Order 76-26, filed 8/23/76.

296-48-2015 Test equipment. [Order 68-4, § 296-48-2015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2021 Required air. [Order 68-4, § 296-48-2020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2021.] Repealed by Order 76-26, filed 8/23/76.

296-48-2025 Fresh air openings. [Order 68-4, § 296-48-2025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2031 Location of openings. [Order 68-4, § 296-48-2030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2031.] Repealed by Order 76-26, filed 8/23/76.

296-48-2041 Return air openings. [Order 68-4, § 296-48-2040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2041.] Repealed by Order 76-26, filed 8/23/76.

296-48-2045 Return air ducts. [Order 68-4, § 296-48-2045, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-2051 Permanent openings. [Order 68-4, § 296-48-2050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-2051.] Repealed by Order 76-26, filed 8/23/76.

ELECTRICAL EQUIPMENT AND INSTALLATION

296-48-3001 General. [Order 70-2, § 296-48-3001, filed 4/27/70; Order 68-4, § 296-48-3000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3001.] Repealed by Order 76-26, filed 8/23/76.

296-48-3011 Battery circuits. [Order 70-2, § 296-48-3011, filed 4/27/70; Order 68-4, § 296-48-3011, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3011.] Repealed by Order 75-20, filed 7/16/75.

296-48-3015 Wiring materials for low-voltage circuits for recreational vehicles. [Order 70-2, § 296-48-3015, filed 4/27/70; Order 68-4, § 296-48-3015, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3019 Wiring methods. [Order 70-2, § 296-48-3019, filed 4/27/70; Order 68-4, § 296-48-3020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3019.] Repealed by Order 75-20, filed 7/16/75.

296-48-3021 Generator installations. [Order 70-2, § 296-48-3021, filed 4/27/70; Order 68-4, § 296-48-3021, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3025 Overcurrent protection. [Order 70-2, § 296-48-3025, filed 4/27/70; Order 68-4, § 296-48-3025, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3031 Combination electrical systems. [Order 70-2, § 296-48-3031, filed 4/27/70; Order 68-4, § 296-48-3030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3031.] Repealed by Order 75-20, filed 7/16/75.

296-48-3041 Separation. [Order 68-4, § 296-48-3040, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3041.] Repealed by Order 75-20, filed 7/16/75.

296-48-3045 Protection and insulation. [Order 68-4, § 296-48-3045, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3051 Overcurrent protection and mounting. [Order 68-4, § 296-48-3050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3051.] Repealed by Order 75-20, filed 7/16/75.

296-48-3055 Identification. [Order 70-2, § 296-48-3055, filed 4/27/70; Order 68-4, § 296-48-3055, filed 5/31/68, effective 7/1/68.] Repealed by Order 75-20, filed 7/16/75.

296-48-3065 Application. [Order 70-2, § 296-48-3065, filed 4/27/70; Order 68-4, § 296-48-3065, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3066 Materials and equipment. [Order 70-2, § 296-48-3066, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-3071 Receptacle outlets required. [Order 70-2, § 296-48-3071, filed 4/27/70; Order 68-4, § 296-48-3070, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3071.] Repealed by Order 76-26, filed 8/23/76.

296-48-3072 Ground-fault circuit protection. [Order 75-4, § 296-48-3072, filed 3/5/75.] Repealed by Order 76-26, filed 8/23/76.

296-48-3075 Branch circuits required. [Order 71-11, § 296-48-3075, filed 10/8/71; Order 70-2, § 296-48-3075, filed 4/27/70; Order 68-4, § 296-48-3075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3081 Calculations for lighting and appliance load. [Order 70-2, § 296-48-3081, filed 4/27/70; Order 68-4, § 296-48-3080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3081.] Repealed by Order 76-26, filed 8/23/76.

296-48-3085 Branch circuit panelboard. [Order 70-2, § 296-48-3085, filed 4/27/70; Order 68-4, § 296-48-3085, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3091 Identification. [Order 68-4, § 296-48-3090, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-3091.] Repealed by Order 76-26, filed 8/23/76.

296-48-3095 Circuit breakers and fuses. [Order 68-4, § 296-48-3095, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-3098 Conductors in outlet boxes. [Order 70-2, § 296-48-3098, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

POWER SUPPLY INSTALLATIONS

296-48-4001 General. [Order 68-4, § 296-48-4000, filed 5/3/68, effective 7/1/68. Codified as WAC 296-48-4001.] Repealed by Order 76-26, filed 8/23/76.

296-48-4005 Power supply assembly. [Order 70-2, § 296-48-4005, filed 4/27/70; Order 68-4, § 296-48-4005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4011 Attachment-plug cap. [Order 70-2, § 296-48-4011, filed 4/27/70; Order 68-4, § 296-48-4010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4011.] Repealed by Order 76-26, filed 8/23/76.

296-48-4015 Overhead and undervehicle feeder assemblies. [Order 70-2, § 296-48-4015, filed 4/27/70; Order 68-4, § 296-48-4015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4021 Identification of power supply connection. [Order 70-2, § 296-48-4021, filed 4/27/70; Order 68-4, § 296-48-4020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4021.] Repealed by Order 76-26, filed 8/23/76.

296-48-4025 Location power supply assembly. [Order 70-2, § 296-48-4025, filed 4/27/70; Order 68-4, § 296-48-4025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4031 Location—Permanent wiring method. [Order 68-4, § 296-48-4030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4031.] Repealed by Order 76-26, filed 8/23/76.

WIRING METHODS

296-48-4051 Protection and installation. [Order 70-2, § 296-48-4051, filed 4/27/70; Order 68-4, § 296-48-4050, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4051.] Repealed by Order 76-26, filed 8/23/76.

296-48-4055 Expandable or multiple vehicles. [Order 70-2, § 296-48-4055, filed 4/27/70; Order 68-4, § 296-48-4055, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4061 Under chassis wiring (exposed to weather). [Order 70-2, § 296-48-4061, filed 4/27/70; Order 68-4, § 296-48-4060, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4061.] Repealed by Order 76-26, filed 8/23/76.

296-48-4062 Conductors and outlet boxes. [Order 70-2, § 296-48-4062, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4063 Painting of wiring. [Order 70-2, § 296-48-4063, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4064 Connection of terminals and splices. [Order 70-2, § 296-48-4064, filed 4/27/70; Order 68-4, § 296-48-4065, filed 5/31/68, effective 7/1/68. Formerly WAC 296-48-4065 relating to splices in grounding. Conductor now codified as WAC 296-48-4064 (part).] Repealed by Order 76-26, filed 8/23/76.

296-48-4065 Wall switches. [Order 70-2, § 296-48-4065, filed 4/27/70. Formerly WAC 296-48-4065 relating to splices in grounding conductor see WAC 296-48-4064.] Repealed by Order 76-26, filed 8/23/76.

296-48-4066 Receptacles. [Order 70-2, § 296-48-4066, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

296-48-4075 Lighting fixtures. [Order 68-4, § 296-48-4075, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4081 Shower fixtures. [Order 70-2, § 296-48-4081, filed 4/27/70; Order 68-4, § 296-48-4080, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4081.] Repealed by Order 76-26, filed 8/23/76.

296-48-4085 Equipment mounting. [Order 68-4, § 296-48-4085, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-4091 Outdoor fixtures and equipment. [Order 68-4, § 296-48-4090, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-4091.] Repealed by Order 76-26, filed 8/23/76.

GROUNDING

296-48-5001 Panelboard grounding. [Order 70-2, § 296-48-5001, filed 4/27/70; Order 68-4, § 296-48-5000, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5001.] Repealed by Order 76-26, filed 8/23/76.

296-48-5005 Grounded conductor (neutral). [Order 68-4, § 296-48-5005, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5011 Appliance grounding. [Order 68-4, § 296-48-5010, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5011.] Repealed by Order 76-26, filed 8/23/76.

296-48-5015 Interior grounding. [Order 68-4, § 296-48-5015, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5021 Grounding of noncurrent-carrying metal parts. [Order 68-4, § 296-48-5020, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5021.] Repealed by Order 76-26, filed 8/23/76.

296-48-5025 120-volt or 120/240-volt. [Order 70-2, § 296-48-5025, filed 4/27/70; Order 68-4, § 296-48-5025, filed 5/31/68, effective 7/1/68.] Repealed by Order 76-26, filed 8/23/76.

296-48-5031 Battery and low voltage circuits. [Order 70-2, § 296-48-5031, filed 4/27/70; Order 68-4, § 296-48-5030, filed 5/31/68, effective 7/1/68. Codified as WAC 296-48-5031.] Repealed by Order 75-20, filed 7/16/75.

296-48-6001 Examination of equipment for safety. [Order 70-2, § 296-48-6001, filed 4/27/70.] Repealed by Order 76-26, filed 8/23/76.

CONSTRUCTION, OCCUPANCY AND FIRE SAFETY

296-48-6101 Minimum requirements. [Order 70-10, § 296-48-6101, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6111 Structural analysis. [Order 70-10, § 296-48-6111, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6115 Standards for equipment installations. [Order 70-10, § 296-48-6115, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6121 Structural requirements. [Order 70-10, § 296-48-6121, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6125 Design loads. [Order 70-10, § 296-48-6125, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6131 Wind loads. [Order 70-10, § 296-48-6131, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6135 Roof loads. [Order 70-10, § 296-48-6135, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6141 Walls. [Order 70-10, § 296-48-6141, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6145 Firestopping. [Order 70-10, § 296-48-6145, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6151 Interior partition. [Order 70-10, § 296-48-6151, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6155 Floors. [Order 70-10, § 296-48-6155, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6161 Design load deflections. [Order 70-10, § 296-48-6161, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6165 Ultimate load tests. [Order 70-10, § 296-48-6165, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6171 Chassis assembly. [Order 70-10, § 296-48-6171, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6175 Basic structural integrity. [Order 70-10, § 296-48-6175, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6181 Roof rafter or truss test procedure. [Order 70-10, § 296-48-6181, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6185 Weather resistance. [Order 70-10, § 296-48-6185, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6191 Interior walls, partitions and ceilings. [Order 73-17, § 296-48-6191, filed 10/12/73; Order 70-10, § 296-48-6191, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6195 Rodent resistance. [Order 70-10, § 296-48-6195, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6201 Heat loss. [Order 73-17, § 296-48-6201, filed 10/12/73; Order 70-10, § 296-48-6201, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6205 Room and hallway sizes. [Order 73-17, § 296-48-6205, filed 10/12/73; Order 70-10, § 296-48-6205, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6211 Ceiling height. [Order 73-17, § 296-48-6211, filed 10/12/73; Order 70-10, § 296-48-6211, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6215 Light and ventilation. [Order 73-17, § 296-48-6215, filed 10/12/73; Order 71-11, § 296-48-6215, filed 10/8/71; Order 70-10, § 296-48-6215, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6221 Exit facilities. [Order 73-17, § 296-48-6221, filed 10/12/73; Order 71-11, § 296-48-6221, filed 10/8/71; Order 70-10, § 296-48-6221, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6222 Interior privacy. [Order 73-17, § 296-48-6222, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-6223 Interior passage. [Order 73-17, § 296-48-6223, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

296-48-6225 Windows. [Order 73-17, § 296-48-6225, filed 10/12/73; Order 70-10, § 296-48-6225, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

296-48-6226 Mobile home fire warning equipment. [Order 73-17, § 296-48-6226, filed 10/12/73.] Repealed by Order 76-26, filed 8/23/76.

Appendix A Flexural rigidity chart. Figures 1, 2, 3, and 4. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

Table 1 Accepted engineering practice standards. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 76-26, filed 8/23/76.

Appendix B Heat loss. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

Appendix C Table 1 maximum allowable areas of glass table 2 adjustment factors relative resistance to wind loads table 3 glass dimensional tolerances table 4 glazing relative to specific hazardous locations. [Order 70-10, filed 9/17/70, effective 1/1/71.] Repealed by Order 73-17, filed 10/12/73.

Chapter 296-48A
STANDARDS FOR RECREATIONAL VEHICLES

296-48A-001 Standards for recreational vehicles. [Order 75-21, § 296-48A-001, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-200 Individual vents. [Order 75-21, § 296-48A-200, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-400 Sizing and capacity of gas piping. [Order 75-21, § 296-48A-400, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-405 Description of tables. [Order 75-21, § 296-48A-405, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-410 Use of capacity tables. [Order 75-21, § 296-48A-410, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-600 Low-voltage wiring materials. [Order 75-21, § 296-48A-600, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-605 Power-supply assembly. [Order 75-21, § 296-48A-605, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-610 Ground-fault circuit protection. [Order 75-21, § 296-48A-610, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-615 Labeling at the electrical entrance. [Order 75-21, § 296-48A-615, filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-700 Administrative—Authority for recreational vehicle code. [Order 76-26, § 296-48A-700, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-750 Conditions of reciprocity. [Order 76-26, § 296-48A-750, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-755 Agreements with out-of-state jurisdictions. [Order 76-26, § 296-48A-755, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-770 Definitions. [Order 76-26, § 296-48A-770, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-780 Enforcement. [Order 76-26, § 296-48A-780, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-800 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48A-800, filed 8/23/76.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

296-48A-990 Appendix. [Order 75-21, Appendix (codified as WAC 296-48A-990), filed 7/16/75.] Repealed by 82-09-053 (Order 82-13), filed 4/16/82. Statutory Authority: RCW 43.22.340.

Chapter 296-48B
STANDARDS FOR COMMERCIAL COACHES

296-48B-001 Administrative authority for commercial coach code. [Order 76-26, § 296-48B-001, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-002 Administrative authority for commercial coach code—Enforcement. [Order 76-26, § 296-48B-002, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-005 General. [Order 75-40, § 296-48B-005, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-006 Approvals, inspections, quality control, identification. [Order 76-26, § 296-48B-006, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-009 Definitions incorporated by reference. [Order 76-26, § 296-48B-009, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-010 Definitions. [Order 76-26, § 296-48B-010, filed 8/23/76; Order 75-40, § 296-48B-010, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-015 Minimum requirements. [Order 75-40, § 296-48B-015, filed 12/4/75.] Repealed by 82-04-060 (Order

82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–020 Structural analysis. [Order 75–40, § 296–48B–020, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–025 Standards for equipment and installations. [Order 76–26, § 296–48B–025, filed 8/23/76; Order 75–40, § 296–48B–025, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–030 Structural design—Requirements. [Order 75–40, § 296–48B–030, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–032 New materials and methods. [Order 75–40, § 296–48B–032, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–035 Design dead loads. [Order 75–40, § 296–48B–035, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–040 Design live loads. [Order 76–26, § 296–48B–040, filed 8/23/76; Order 75–40, § 296–48B–040, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–050 Standard wind. [Order 75–40, § 296–48B–050, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–055 Roof loads. [Order 75–40, § 296–48B–055, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–060 Snow loads. [Order 75–40, § 296–48B–060, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–065 Posting design loads. [Order 75–40, § 296–48B–065, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–068 Design load deflection. [Order 75–40, § 296–48B–068, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–070 Fastening of structural systems. [Order 75–40, § 296–48B–070, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–075 Instructions. [Order 75–40, § 296–48B–075, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–080 Walls. [Order 75–40, § 296–48B–080, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–085 Drilling or notching of wood wall structural members. [Order 75–40, § 296–48B–085, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–090 Firestopping. [Order 76–26, § 296–48B–090, filed 8/23/76; Order 75–40, § 296–48B–090, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–095 Interior walls and partitions. [Order 75–40, § 296–48B–095, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–100 Floors. [Order 76–26, § 296–48B–100, filed 8/23/76; Order 75–40, § 296–48B–100, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–105 Drilling or notching of wood joist structural members. [Order 75–40, § 296–48B–105, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–115 Roof trusses. [Order 75–40, § 296–48B–115, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–120 Structural load test. [Order 75–40, § 296–48B–120, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–125 Roof coverings. [Order 76–26, § 296–48B–125, filed 8/23/76; Order 75–40, § 296–48B–125, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–140 Flame–spread limitations and combustibility. [Order 76–26, § 296–48B–140, filed 8/23/76; Order 75–40, § 296–48B–140, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–142 Kitchen cabinet protection. [Order 75–40, § 296–48B–142, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–143 Carpeting. [Order 75–40, § 296–48B–143, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–145 Undervehicle closure material. [Order 75–40, § 296–48B–145, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–150 Heat loss. [Order 75–40, § 296–48B–150, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–160 Bathroom. [Order 75–40, § 296–48B–160, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–165 Glass and glazed openings. [Order 75–40, § 296–48B–165, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–175 Fire warning equipment—Automatic smoke detectors. [Order 75–40, § 296–48B–175, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–177 Room and hallway sizes. [Order 76–26, § 296–48B–177, filed 8/23/76.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–178 Ceiling height. [Order 76–26, § 296–48B–178, filed 8/23/76.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–179 Light and ventilation. [Order 76–26, § 296–48B–179, filed 8/23/76.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–180 Exit facilities. [Order 76–26, § 296–48B–180, filed 8/23/76; Order 75–40, § 296–48B–180, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–185 Weather resistance. [Order 76–26, § 296–48B–185, filed 8/23/76.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–190 Windstorm protection. [Order 76–26, § 296–48B–190, filed 8/23/76; Order 75–40, § 296–48B–190, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–19001 Table—Ties required per side of single wide (1) commercial coach. [Order 76–26, Table (codified as WAC 296–48B–19001), filed 8/23/76; Order 75–40, Table, filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296–48B–19002 Table I—Appendix CC—Accepted engineering practice standards. [Order 75–40, Table I—Appendix CC (codified as WAC 296–48B–19002), filed 12/4/75.] Repealed by 82–04–060 (Order 82–4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19003 Table II—Appendix CC—Glazing in hazardous locations. [Order 75-40, Table II—Appendix CC (codified as WAC 296-48B-19003), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19004 Table III—Appendix CC—Minimum uniformly distributed live loads. [Order 75-40, Table III—Appendix CC (codified as WAC 296-48B-19004), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-19005 Table IV—Appendix CC—Concentrated live loads. [Order 75-40, Table IV—Appendix CC (codified as WAC 296-48B-19005), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-193 Interior privacy. [Order 76-26, § 296-48B-193, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-196 Interior passage. [Order 76-26, § 296-48B-196, filed 8/23/76.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-200 Electrical—General. [Order 75-40, § 296-48B-200, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-210 Definitions. [Order 75-40, § 296-48B-210, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-215 Low-voltage systems—Low-voltage circuits. [Order 75-40, § 296-48B-215, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-220 Wiring materials—Combination electrical systems. [Order 75-40, § 296-48B-220, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-225 Generator installations—Mounting. [Order 75-40, § 296-48B-225, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-230 Calculations—Branch circuit and feeder calculations. [Order 75-40, § 296-48B-230, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-235 Disconnecting means and branch-circuit protective equipment—General. [Order 75-40, § 296-48B-235, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-245 Power supply—Feeder assembly equipment. [Order 75-40, § 296-48B-245, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-250 Identification of feeder assembly connection. [Order 75-40, § 296-48B-250, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-255 Wiring methods—Wiring of expandable or multiple units. [Order 75-40, § 296-48B-255, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-260 Under-chassis wiring. [Order 75-40, § 296-48B-260, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-265 Rodent resistance. [Order 75-40, § 296-48B-265, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-270 Electrical equipment—Lighting fixtures. [Order 75-40, § 296-48B-270, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-275 Equipment mounting. [Order 75-40, § 296-48B-275, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-280 Outdoor outlets, fixtures, air cooling equipment, etc. [Order 75-40, § 296-48B-280, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-285 Grounding—General. [Order 75-40, § 296-48B-285, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-290 Switch and receptacle plates. [Order 75-40, § 296-48B-290, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-295 Testing—Dielectric strength test. [Order 75-40, § 296-48B-295, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-400 Mechanical—General. [Order 75-40, § 296-48B-400, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-405 Mechanical—Definitions. [Order 75-40, § 296-48B-405, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-410 LPG equipment and installations—Construction of containers. [Order 75-40, § 296-48B-410, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-415 Location of LP-Gas containers and systems. [Order 75-40, § 296-48B-415, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-420 LP-Gas container valves and accessories. [Order 75-40, § 296-48B-420, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-425 LP-Gas safety devices. [Order 75-40, § 296-48B-425, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-430 LP-Gas system enclosure and mounting. [Order 75-40, § 296-48B-430, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-435 LP-Gas system design and service line pressure. [Order 75-40, § 296-48B-435, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-440 Electrical equipment. [Order 75-40, § 296-48B-440, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-445 Gas piping systems—General. [Order 75-40, § 296-48B-445, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-450 Piping design. [Order 75-40, § 296-48B-450, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-455 Materials. [Order 75-40, § 296-48B-455, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-460 Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-460, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-465 System sizing—Gas pipe sizing. [Order 75-40, § 296-48B-465, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-467 Sizing and capacity of gas piping. [Order 75-40, § 296-48B-467, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-468 Description of tables. [Order 75-40, § 296-48B-468, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-469 Use of capacity tables. [Order 75-40, § 296-48B-469, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-46901 Table H-2—Part I and Part II. [Order 75-40, Table H-2—Part I and Part II (codified as WAC 296-48B-46901), filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-470 Joints and installation—Joints for gas pipe. [Order 75-40, § 296-48B-470, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-475 Tubing joints. [Order 75-40, § 296-48B-475, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-480 Concealed tubing. [Order 75-40, § 296-48B-480, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-485 Pipe-joint compound. [Order 75-40, § 296-48B-485, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-490 Concealed joints. [Order 75-40, § 296-48B-490, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-500 Hangers and supports. [Order 75-40, § 296-48B-500, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-505 Electrical ground. [Order 75-40, § 296-48B-505, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-510 Identification of gas supply connections. [Order 75-40, § 296-48B-510, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-515 Gas piping system openings. [Order 75-40, § 296-48B-515, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-520 Appliance connections. [Order 75-40, § 296-48B-520, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-525 Valves. [Order 75-40, § 296-48B-525, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-530 Testing for leakage—Before appliances are connected. [Order 75-40, § 296-48B-530, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-535 After appliances are connected. [Order 75-40, § 296-48B-535, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-540 Rodent resistance. [Order 75-40, § 296-48B-540, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-550 Oil piping systems—General. [Order 75-40, § 296-48B-550, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-555 Oil piping systems—Expandable or multiple commercial coaches. [Order 75-40, § 296-48B-555, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-560 Oil piping systems—Materials. [Order 75-40, § 296-48B-560, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-565 Oil piping systems—Size of oil piping. [Order 75-40, § 296-48B-565, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-570 Oil piping systems—Joints for oil piping. [Order 75-40, § 296-48B-570, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-575 Oil piping systems—Tubing joints. [Order 75-40, § 296-48B-575, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-580 Oil piping systems—Pipe-joint compound. [Order 75-40, § 296-48B-580, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-585 Oil piping systems—Couplings. [Order 75-40, § 296-48B-585, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-590 Oil piping systems—Grade of piping. [Order 75-40, § 296-48B-590, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-595 Oil piping systems—Strap hangers. [Order 75-40, § 296-48B-595, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-598 Oil piping systems—Testing for leakage. [Order 75-40, § 296-48B-598, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-600 Appliances—Heat-producing. [Order 75-40, § 296-48B-600, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-610 Appliances—Installation. [Order 75-40, § 296-48B-610, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-615 Appliances—Venting, ventilation and combustion air. [Order 75-40, § 296-48B-615, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-620 Appliances—Clearance-general. [Order 75-40, § 296-48B-620, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-675 Safety devices—Water heater relief valves. [Order 75-40, § 296-48B-675, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-680 Air ducts—Duct material for circulating air supply system. [Order 75-40, § 296-48B-680, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-685 Air ducts—Sizing of ducts. [Order 75-40, § 296-48B-685, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-690 Air ducts—Airtightness of supply duct systems. [Order 75-40, § 296-48B-690, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-695 Air ducts—Expandable or multiple commercial coach connections. [Order 75-40, § 296-48B-695, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-720 Air ducts—Return air systems. [Order 75-40, § 296-48B-720, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-725 Air ducts—Joints and seams. [Order 75-40, § 296-48B-725, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-730 Air ducts—Supports. [Order 75-40, § 296-48B-730, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-735 Air ducts—Registers or grills. [Order 75-40, § 296-48B-735, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-740 Air ducts—Duct and plenum insulation. [Order 75-40, § 296-48B-740, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-800 Plumbing—Definitions. [Order 75-40, § 296-48B-800, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-805 Plumbing—General. [Order 75-40, § 296-48B-805, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-810 Plumbing—Location of water-supply connections. [Order 75-40, § 296-48B-810, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-815 Plumbing—Tub and shower enclosures. [Order 75-40, § 296-48B-815, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-820 Drainage—Location of drain outlets. [Order 75-40, § 296-48B-820, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-825 Drainage—Cap or plug. [Order 75-40, § 296-48B-825, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-830 Drainage—Clearance from drain outlet. [Order 75-40, § 296-48B-830, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

296-48B-835 Drainage—Drainage systems materials. [Order 75-40, § 296-48B-835, filed 12/4/75.] Repealed by 82-04-060 (Order 82-4), filed 2/2/82. Statutory Authority: RCW 43.22.340.

Chapter 296-51
AMMONIUM NITRATE PRECAUTIONS

296-51-010 Storage and handling of ammonium nitrate—Posting of caution placards. [Rule 1.010, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-020 Storage and handling of ammonium nitrate—General precautions. [Rule 1.020, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-030 Storage and handling of ammonium nitrate—Storage of bags. [Rule 1.030, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-040 Storage and handling of ammonium nitrate—Storage in noncombustible type buildings. [Rule 1.040, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-050 Storage and handling of ammonium nitrate—Open lights or flame. [Rule 1.050, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-060 Storage and handling of ammonium nitrate—Bag handling. [Rule 1.060, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-070 Storage and handling of ammonium nitrate—Loosening of caked ammonium nitrate. [Rule 1.070, effective 11/1/62; § 2, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-100 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Mixing with sensitizing materials. [Rule 2.010, effective 11/1/62; § 6f1, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-110 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Marking of bags or containers. [Rule 2.020, effective 11/1/62; § 6f2, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-120 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Storage of raw ammonium nitrate. [Rule 2.030, effective 11/1/62; § 1b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-130 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Open drains and piping—Warehouse floors. [Rule 2.040, effective 11/1/62; § 3a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-140 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Floors in processing plant. [Rule 2.050, effective 11/1/62; § 3b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-150 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Fuel storage. [Rule 2.060, effective 11/1/62; § 1c and 3b, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-160 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Heat. [Rule 2.070, effective 11/1/62; § 3d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-170 Processing plant for sensitizing ammonium nitrate operation and storage requirements—Smoking. [Rule 2.080, effective 11/1/62; § 3j, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-180 Processing plant for sensitizing ammonium nitrate operation and storage requirements—One day's production. [Rule 2.090, effective 11/1/62; § 3f, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-200 General provisions—Unusual compositions. [Rule 3.010, effective 11/1/62; § 3e, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-210 General provisions—Mixing for above ground use at jobsite. [Rule 3.020, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-220 General provisions—Ammonium nitrate bag accumulation prohibited. [Rule 3.030, effective 11/1/62; § 3k, filed 8/8/60 and 5/1/62; § 6e(3a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-230 General provisions—Cleanliness. [Rule 3.040, effective 11/1/62; Rule 3l, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-240 General provisions—Proper stacking. [Rule 3.050, effective 11/1/62; § 3m, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-250 General provisions—Mobile equipment. [Rule 3.060, effective 11/1/62; § 4a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-260 General provisions—Volatile fuels. [Rule 3.070, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-270 General provisions—Crude oil and crankcase oil prohibited. [Rule 3.080, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-280 General provisions—Misfires (other than underground). [Rule 3.090, effective 11/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-300 General storage requirements—Standard magazine construction. [Rule 4.010, effective 11/1/62; § 3h, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-310 General storage requirements—Calculation of distance limitations. [Rule 4.020, effective 11/1/62; §

1a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-320 General storage requirements—Storage of processed compositions. [Rule 4.030, effective 11/1/62; § 1d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-330 General storage requirements—Ventilation of storage areas. [Rule 4.040, effective 11/1/62; § 3c, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-340 General storage requirements—Storage in vans. [Rule 4.050, effective 11/1/62; § 3g, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-350 General storage requirements—Storage van requirements. [Rule 4.060, effective 11/1/62; § 3i, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-360 General storage requirements—Limitation of amount of fuel sensitized ammonium nite at blasting site. [Rule 4.070, effective 11/1/62; § 5a, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-400 Underground blasting operations—Permit required—Must be renewed annually—Posted on premises. [Rule 5.010, effective 11/1/62; § 6e, filed 8/8/60; § 6e, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-410 Underground blasting operations—Rating of blasting agents. [Rule 5.020, effective 11/1/62; § 6f, filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-420 Underground blasting operations—Loading of holes. [Rule 5.030, effective 11/1/62; § 6e(1a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-430 Underground blasting operations—Priming. [Rule 5.040, effective 11/1/62; § 6a, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-440 Underground blasting operations—Grounding. [Rule 5.050, effective 11/1/62; § 6e(2a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-450 Underground blasting operations—Firing. [Rule 5.060, effective 11/1/62; § 6e(5a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-460 Underground blasting operations—Misfire. [Rule 5.070, effective 11/1/62; § 6b & 6c, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-470 Underground blasting operations—Fumes. [Rule 5.080, effective 11/1/62; § 6d, filed 8/8/60 and 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-480 Underground blasting operations—Wet holes. [Rule 5.090, effective 11/1/62; § 6e(4a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

296-51-490 Underground blasting operations—Liners prohibited. [Rule 5.100, effective 11/1/62; § 6e(4a), filed 5/1/62.] Repealed by Order 76-28, filed 9/28/76.

Chapter 296-53
SAFETY REQUIREMENTS FOR EXPLOSIVE-ACTUATED FASTENING TOOLS

Sections 296-53-010, 296-53-020, 296-53-030, 296-53-040, 296-53-050, 296-53-060, 296-53-070, 296-53-080, 296-53-090, 296-53-100, 296-53-110. [Paragraphs I through XI, effective 8/1/52, filed 3/23/60.] Repealed by Order 68-6, filed 10/24/68, effective 12/1/68.

296-53-200 Scope. [Order 68-6, § 296-53-200, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-210 Purpose. [Order 68-6, § 296-53-210, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-220 Exception. [Order 68-6, § 296-53-220, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-230 References to other codes. [Order 68-6, § 296-53-230, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-240 Effective date. [Order 68-6, § 296-53-240, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-250 Definitions. [Order 68-6, § 296-53-250, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-260 Design requirements—High velocity tools. [Order 68-6, § 296-53-260, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-270 Low velocity piston tools. [Order 68-6, § 296-53-270, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-280 Hammer-operated piston tools—Low velocity type. [Order 68-6, § 296-53-280, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-290 Requirements for loads and fasteners. [Order 68-6, § 296-53-290, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-300 Approvals. [Order 68-6, § 296-53-300, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-310 Operation. [Order 68-6, § 296-53-310, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-320 Servicing. [Order 68-6, § 296-53-320, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-330 Qualification and certification of operators. [Order 68-6, § 296-53-330, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-340 Storage of explosive-actuated tools, instruction books, cleaning kits, and tools. [Order 68-6, § 296-53-340, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

296-53-350 Use low velocity tools when possible. [Order 68-6, § 296-53-350, filed 10/24/68, effective 12/1/68.] Repealed by Order 75-12, filed 4/4/75.

Chapter 296-58
SAFETY STANDARDS--METALS INDUSTRY

296-58-001 Foreword. [Foreword, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-004 Practical application of standards. [Practical application paragraphs, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-010 Safe place standards. [Standard 1, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-015 Safe practice standards. [Standard 2, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-020 Standard safeguard defined. [Standard 3, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-025 Approved. [Standard 4, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-030 Substantial. [Standard 5, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-035 Exposed to contact. [Standard 6, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-040 Warning placards. [Standard 7, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-045 Wooden guards. [Standard 8, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-050 Metal guards—Framework. [Standard 9, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-055 Standard railings. [Standard 10, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-060 Fillers. [Standard 11, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-065 Filling material for metal guards. [Standard 12, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-070 Safeguards must not admit rod or pipes. [Standard 13, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-075 Lighting and illumination. [Standard 14, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-080 Diffusion and distribution of artificial and natural light. [Standard 15, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-085 Foundations. [Standard 16, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-090 Housekeeping. [Standard 17, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-095 Plant location. [Standard 18, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-100 Power transmission equipment and machine parts. [Standard 19, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-105 Saw guarding (metal and wood). [Standard 20, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-110 Machine power control. [Standard 21, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-115 Loose pulleys and cone pulleys. [Standard 22, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-120 Exposure to harmful atmospheric conditions and exposure to harmful materials. [Standard 23, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-125 Nontoxic dusts. [Standard 24, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-130 Methods of control. [Standard 25, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-135 Minimum general requirements for electrical safety. [Standard 26, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-140 Helpers around machines shall receive instructions. [Standard 27, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-145 Machines shall be stopped in making repairs. [Standard 28, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-150 Torn and loose clothing. [Standard 29, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-155 Personal protective equipment and clothing. [Standard 30, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-160 Sterilization of equipment. [Standard 31, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-165 Caps or other head covering. [Standard 32, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-170 Prevention of industrial disease. [Standard 33, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-175 Carbon monoxide gas. [Standard 34, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-180 Acids and chemicals. [Standard 35, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-185 Steam pipes. [Standard 36, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-190 Hot liquid vats—Location of. [Standard 37, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-195 Vats and tanks guarded. [Standard 38, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-200 Building—Floors. [Standard 39, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-205 Stairways. [Standard 40, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-210 Fire escapes. [Standard 41, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-215 Swinging doors—Windows required. [Standard 42, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-220 Doorways near railroad tracks and roadways. [Standard 43, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-225 Platforms and runways. [Standard 44, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-230 Floor openings. [Standard 45, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-235 Trestles and walks in industrial plants. [Standard 46, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-240 Hoistways. [Standard 47, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-245 Elevators. [Standard 48, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-250 Conveyors. [Standard 49, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-255 Revolving drums and cylinders. [Standard 50, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-260 Means to prevent slipping. [Standard 51, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-265 Polishing and buffing wheels. [Standard 52, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-270 Cranes and hoists definitions. [Standard 53, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-275 All cranes—Construction. [Standard 54, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-280 All cranes—Electrical equipment. [Standard 55, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-285 All cranes—Chains and wire rope. [Standard 56, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-290 All cranes—Floor operated cranes. [Standard 57, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-295 All cranes—Operators. [Standard 58, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-300 All cranes—Signalmen. [Standard 59, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-305 All cranes—Repairmen. [Standard 60, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-310 All cranes—Construction requirements. [Standard 61, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-315 All cranes—Platforms and footwalks. [Standard 62, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-320 All cranes—Cages. [Standard 63, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-325 All cranes—Rail stops, bumpers and fenders. [Standard 64, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-330 Special requirements for gantry cranes. [Standard 65, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-335 Requirements for A-frames, mobile cranes and excavation equipment, loaders, and locomotive cranes and equipment. [Standard 66, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-340 Construction, operation and maintenance—Chain and electric hoists. [Standard 67, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-345 Construction, operation and maintenance—Monorail hoists. [Standard 68, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-350 Construction, operation and maintenance—Air hoists. [Standard 69, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-355 Jib, pillar, and portable floor cranes, crabs and winches. [Standard 70, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-360 Fibre rope. [Standard 71, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-365 Wire rope clamps—Thimbles—Sheaves. [Standard 72, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-370 Wire rope slings, hooks. [Standard 73, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-375 Ladles and crucibles. [Standard 74, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-380 Molding and casting areas. [Standard 75, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-385 Drop guarding. [Standard 76, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-390 Wet materials. [Standard 77, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-395 Explosive materials. [Standard 78, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-400 Material storage. [Standard 79, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-405 Shears. [Standard 80, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-410 Power vehicles. [Standard 81, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-415 Sanitation. [Standard 82, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-420 Washroom and locker. [Standard 83, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-425 Grinding wheels. [Standard 84, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-430 Spray rooms, spray booths, etc. [Standard 85, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-435 Care and use of ladders. [Standard 86, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-440 Fixed ladders. [Standard 87, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-445 Ladder cage. [Standard 88, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-450 Landings. [Standard 89, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-455 Machine, forging and metalworking shops. [Standard 90, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

296-58-460 Power presses and drop hammers. [Standard 91, effective 6/1/55, filed 3/23/60.] Repealed by Order 76-7, filed 3/1/76. Later promulgation, see chapter 296-61 WAC.

Chapter 296-60
SAFETY STANDARDS--METALLIC AND NONMETALLIC MINES

Sections 296-60-010, 296-60-015, 296-60-020, 296-60-025, 296-60-030, 296-60-035, 296-60-040, 296-60-045, 296-60-050, 296-60-055, 296-60-060, 296-60-065, 296-60-070, 296-60-075, 296-60-080, 296-60-085, 296-60-090, 296-60-095, 296-60-100, 296-60-105, 296-60-110, 296-60-115, 296-60-120, 296-60-125, 296-60-130, 296-60-135, 296-60-140, 296-60-145, 296-60-150, 296-60-155, 296-60-160, 296-60-165, 296-60-166, 296-60-170, 296-60-175, 296-60-180, 296-60-185, 296-60-190, 296-60-195, 296-60-200, 296-60-205, 296-60-210, 296-60-215, 296-60-220, 296-60-225, 296-60-230, 296-60-235, 296-60-240, 296-60-245, 296-60-250, 296-60-255, 296-60-260, 296-60-265, 296-60-268, 296-60-270, 296-60-275, 296-60-280, 296-60-285, 296-60-290, 296-60-295, 296-60-300, 296-60-305, 296-60-310, 296-60-315, 296-60-320, 296-60-325, 296-60-330, 296-60-335, 296-60-340, 296-60-345, 296-60-350, 296-60-355, 296-60-358, 296-60-360, 296-60-365, 296-60-370, 296-60-375, 296-60-380, 296-60-385. [Rules, filed 3/23/60, effective 5/1/48.] Repealed by Order 72-1, filed 2/25/72, effective 4/1/72.

Chapter 296-64
SAFETY STANDARDS--OCCUPATIONAL DISEASES

296-64-001 Preface. [Preface, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-002 Introduction. [Introduction, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-005 Foreword. [Foreword, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-010 Safety standards relating to dusts, fumes, vapors and gases in industry—Application. [Standard 1, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-020 Definitions. [Standard 2, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-030 Control of atmospheric contaminants. [Standard 3, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-031 Threshold limit values. [Appendix 1, filed 3/23/60.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-040 Specifications of air requirements per worker in industrial plants. [Standard 4, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-050 Local exhaust ventilation. [Standard 5, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-060 Personal protective equipment. [Standard 6, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-070 Substitution of nonhazardous equipment, material or process. [Standard 7, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-080 Dust allaying media. [Standard 8, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-090 Isolation of hazardous operations. [Standard 9, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-100 Sanitation and cleanliness. [Standard 10, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-110 Rubber boots. [Standard 11, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-120 Applying paint by the spray method in fixed finishing shops. [Spray paint in fixed finishing shops rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-130 Galvanizing. [Galvanizing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-140 Workmen exposed to silicosis. [Exposure to silicosis rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-150 Plywood manufacturing—Men handling glue (core) sections. [Plywood-glue (core) section rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-160 Auto repair and internal combustion engine adjusting plants. [Auto repair and internal combustion engine adjusting plant rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-170 Applying paint by the method of the spray, other than in fixed finishing shops. [Spray paint rules (other than in fixed finishing shops), effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-180 Wool weaving. [Wool weaving rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-190 Sea foods—Fresh and canning industry employees. [Sea food rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-200 Paint and kalsomine manufacturing and handling. [Paint and kalsomine manufacturing and handling rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-210 Handling and emptying of sacks or barrels containing dry kalsomine, cement, sand-blasting sand and other like material except in manufacturing plants. [Paint and kalsomine sack and barrel rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-220 Shingle manufacturing. [Shingle manufacturing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-230 Compressed air chambers, hard rock workers—Soft earth tunnels and open cuts. [Compressed air, hard rock, soft earth tunnels, and open cut rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-240 Electric and gas torch workers. [Electric and gas torch rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-250 Battery manufacturing and rebuilding. [Battery manufacturing and rebuilding rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-260 Power propelled trucks operated within buildings. [Power propelled truck rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-270 Polishing, grinding and buffing machine operators. [Polishing, grinding, and buffing rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-280 Plating and removal of plating, including acid dips. [Plating and stripping rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-290 Dry cleaning by use of any solvent, producing fumes, gasses or vapors injurious to health, including, but not limiting the same to, carbon tetrachloride, trichloroethylene, perchloroethylene and their sequel. [Dry cleaning rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-300 Lumber and timber treated with arsenic compounds and the handling thereof. [Arsenic treated lumber rules, effective 10/1/38.] Repealed by Order 70-8 (part), filed 7/31/70, effective 9/1/70.

296-64-400 Purpose and scope. [Standard I, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-405 Definitions. [Standard II, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-410 General requirements. [Standard III, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-415 General labeling requirements and attached appendices. [Standard IV, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-420 Container handling and storage. [Standard V, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

296-64-425 Exemptions. [Standard VI, effective 12/1/62.] Repealed by 86-12-004 (Order 86-22), filed 5/22/86. Statutory Authority: RCW 49.17.230, 49.70.180, 49.17.040, 49.17.050 and 49.17.240.

Chapter 296-66
SAFETY STANDARDS--PAINTING AND DECORATING INDUSTRY

296-66-005 Foreword. [Foreword, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-010 Safety educational standards—Introduction. [§ A-1, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-015 Safety educational standards—Management's responsibility. [§ A-2, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-020 Safety educational standards—Employee's responsibility. [§ A-3, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-025 Safety educational standards—Safety inspector plan. [§ A-4, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-030 Safety educational standards—Settlement of disputes. [§ A-5, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-035 Safety educational standards—Safety committee plan. [§ A-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-040 Safety educational standards—Settlement of disputes. [§ A-7, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-045 Safety educational standards—Safety educational report. [§ A-8, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-050 Safety educational standards—Safety bulletin board. [§ A-9, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-055 Safety educational standards—Minimum requirements for first aid. [§ A-9, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-060 Safety educational standards—First-aid kit. [§ A-11, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-065 Safety educational standards—First-aid room. [§ A-12 (part), effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-070 Safety educational standards—Conclusion—Approval for changes. [§ A-12 (part), effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-080 Ladders and scaffolds—Purpose and application. [Ladder and scaffold rules (part), effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-085 Ladders and scaffolds—Definitions. [Ladder and scaffold definitions, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-090 Ladders and scaffolds—General requirements. [§§ B-1 through B-27, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-095 Ladders and scaffolds—Built-up wood scaffolds. [§§ C-1 through C-8, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-100 Ladders and scaffolds—Factory-built scaffold units. [§ D-1, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-105 Ladders and scaffolds—Tubular post scaffolds. [§§ E-1 through E-15, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-110 Ladders and scaffolds—Swinging scaffolds—Construction. [§§ F-1 through F-27, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-115 Ladders and scaffolds—General requirements for swinging scaffolds. [§§ G-1 through G-18, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-120 Ladders and scaffolds—Needle beam scaffolds. [§§ H-1 through H-21, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-125 Ladders and scaffolds—Horse scaffold. [§§ I-1 through I-21, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-130 Ladders and scaffolds—Plasterers' and decorators' inside scaffolds. [§§ J-1 through J-17, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-135 Ladders and scaffolds—Interior hung scaffolds. [§§ J-18 through J-24, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-140 Ladders and scaffolds—Window jack scaffolds. [§§ K-1 through K-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-145 Ladders and scaffolds—Crawling boards or chicken ladders. [§§ L-1 through L-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-150 Ladders and scaffolds—Ladder supported scaffolds. [§§ M-1 through M-9, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-155 Ladders and scaffolds—Ladder specifications—Definitions. [Definitions for ladder specifications, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-160 Ladders and scaffolds—Ladder material. [§ N-1, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-165 Ladders and scaffolds—Step ladders. [§ N-2, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-170 Ladders and scaffolds—Single ladders. [§ N-3, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-175 Ladders and scaffolds—Extension ladders. [§ N-4, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-180 Ladders and scaffolds—Trestle and extension ladders. [§ N-5, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-185 Ladders and scaffolds—Painter's ladder. [§ N-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-190 Ladders and scaffolds—Extension trestles. [§ N-7, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-195 Ladders and scaffolds—Metal ladders. [§ N-8, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-200 Testing scaffold planks and stringers. [§§ O-1 through O-4, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-205 Care and use of ladders. [§§ P-1 through P-31, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-210 Roofing brackets. [§§ Q-1 and Q-2, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-215 Boatswain's chair. [§§ R-1 through R-6, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-220 Life nets—Safety belts—Life lines. [§§ S-1 through S-5, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-225 Application of paint coating—General. [Paint Coating Rules (part), effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-230 Application of paint coating—Definitions. [Paint coating definitions, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-235 Spray coating of buildings, structures and outdoor spraying—Scope of rules. [Scope of spray coating rules, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-240 Spray coating of buildings, structures and outdoor spraying—Equipment. [§§ T-1 and T-2, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-245 Spray coating of buildings, structures and outdoor spraying—Operation. [§§ U-1 through U-12, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-250 Spray coating of buildings, structures and outdoor spraying—Protection of person. [§§ V-1 through V-14, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-255 Coating operations inside of buildings. [§§ W-1 through W-7, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-260 Electrical equipment. [§§ X-1 through X-17, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-265 Air supply. [§§ Y-1 through Y-3, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-270 Operation. [§§ Z-1 through Z-3, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

296-66-275 Maintenance. [§§ AA-1 through AA-5, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

Appendix Illustrations 1 thru 10. [Appendix, effective 11/1/48, filed 3/23/60.] Repealed by Order 76-29, filed 9/30/76.

Chapter 296-68
SAFETY STANDARDS--POWER PROPELLED TRUCKS

296-68-005 Preface. [Preface, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-010 Use of intoxicants. [Rule A-1, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-015 Employer's responsibility. [Rules B-1 through B-3, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-020 Foreman's responsibility. [Rules C-1 through C-3, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-025 Workman's responsibility. [Rules D-1 and D-2, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-030 State inspector. [Rules E-1 and E-2, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-035 Safety meetings. [Rules F-1 through F-4, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-040 First-aid instruction and treatment of injured. [Rules G-1 through G-3, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

296-68-045 Safety standards—Relating to the use of power-propelled trucks used principally in warehouses and docks (housed)—Construction of equipment and operation thereof. [Rules 1 through 16, effective 4/1/38.] Repealed by Order 75-13, filed 4/4/75.

Chapter 296-70
TUNNELS, SHAFTS AND SUBWAYS--SAFETY STANDARDS

296-70-010 Definitions. [Part I, Definitions, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-020 Safety miner. [§ A, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-030 Minimum first-aid requirements. [§ B, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-040 Fire protection. [§ C, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-050 Safe practice standards. [Subsecs. D-1—D-30, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-060 Personal protective equipment and clothing. [Subsecs. D-31—D-34, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-070 Rock dust. [§ E, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-080 Ventilation. [§ F, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-090 Protection against atmospheric containments. [§ G, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-100 Shaft protection. [§ H, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-110 Ladders and stairways. [§ I, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-120 Hoisting engineer. [§ J, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-130 Hoisting. [§ K, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-140 Hoisting ropes. [§ L, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-150 Signals and means of communication. [§ M, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-160 Blasting. [§ N, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-170 Timbering. [§ O, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-180 Lighting. [§ P, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-190 Electrical equipment. [§ Q, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-200 Use of fuel burning equipment in underground work and other enclosed areas. [§ R, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-210 Sumps. [§ S, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

296-70-220 Sanitation. [§ T, filed 3/29/61.] Repealed by Order 76-29, filed 9/30/76.

Chapter 296-74
ANHYDROUS AMMONIA

296-74-010 Tanks. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

296-74-020 Electrical. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

296-74-030 Personnel protection. [Rules (part), filed 3/29/61.] Repealed by Order 75-9, filed 4/4/75.

Chapter 296-76
SAFETY STANDARDS--QUARRY OPERATIONS

Sections 296-76-005, 296-76-010, 296-76-015, 296-76-020, 296-76-025, 296-76-030, 296-76-035, 296-76-040, 296-76-045, 296-76-050, 296-76-055, 296-76-060, 296-76-065, 296-76-070, 296-76-075, 296-76-080, 296-76-085, 296-76-090, 296-76-095, 296-76-100, 296-76-105, 296-76-110, 296-76-115, 296-76-120, 296-76-125. [Rules, filed 3/29/61, effective 8/1/42.] Repealed by Order 72-1, filed 2/25/72, effective 4/1/72.

Chapter 296-80
SAFETY RULES GOVERNING THE CONSTRUCTION, OPERATION, MAINTENANCE AND INSPECTION OF INCLINED PASSENGER LIFTS

296-80-010 Scope. [Order 71-16, § 296-80-010, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-020 Definitions. [Order 71-16, § 296-80-020, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-030 Approval of plans and specifications. [Order 71-16, § 296-80-030, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-040 Runway enclosures. [Order 71-16, § 296-80-040, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-050 Landing enclosure. [Order 71-16, § 296-80-050, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-060 Enclosure clearances. [Order 71-16, § 296-80-060, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-070 Machine rooms. [Order 71-16, § 296-80-070, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-080 Machine supports and factors of safety. [Order 71-16, § 296-80-080, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-090 Car clearances. [Order 71-16, § 296-80-090, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-100 Counterweights when used. [Order 71-16, § 296-80-100, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-110 Landing doors or gates. [Order 71-16, § 296-80-110, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-120 Landing sills. [Order 71-16, § 296-80-120, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-130 Guide rails. [Order 71-16, § 296-80-130, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-140 Car enclosure. [Order 71-16, § 296-80-140, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-150 Safeties. [Order 71-16, § 296-80-150, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-160 Car speed governors. [Order 71-16, § 296-80-160, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-170 Machines. [Order 71-16, § 296-80-170, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-180 Terminal stopping and safety devices. [Order 71-16, § 296-80-180, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-190 Operation and control. [Order 71-16, § 296-80-190, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-200 Limits of speed. [Order 71-16, § 296-80-200, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-210 Ropes. [Order 71-16, § 296-80-210, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-220 Fastening car and counterweight ends of ropes. [Order 71-16, § 296-80-220, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-230 Rope tags. [Order 71-16, § 296-80-230, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-240 Buffers. [Order 71-16, § 296-80-240, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-250 Electrical equipment. [Order 71-16, § 296-80-250, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-260 Inspections and tests. [Order 71-16, § 296-80-260, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-270 Maintenance. [Order 71-16, § 296-80-270, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-280 Rack and pinion drive. [Order 71-16, § 296-80-280, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

296-80-290 Variances from requirements—How granted. [Order 71-16, § 296-80-290, filed 12/7/71.] Repealed by 84-23-001 (Order 84-21), filed 11/8/84. Statutory Authority: RCW 70.87.030 and 70.87.185.

Chapter 296-83
ELECTRIC MANLIFTS

296-83-010 Scope and application. [Rules (part), effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-015 Waiver and variance. [Rules (part), effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-020 Hoistway enclosures and landings. [§ I, Rule 1.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-025 Hoistway gates. [§ II, Rules 2.010-2.030, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4),

filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-030 Elevator car. [§ III, Rules 3.010-3.020, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-035 Elevator doors. [§ IV, Rule 4.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-040 Counterweight, enclosures and fastenings. [§ V, Rule 5.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-045 Guide rails. [§ VI, Rule 6.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-050 Hoisting ropes. [§ VII, Rule 7.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-055 Space under hoistway. [§ VIII, Rule 8.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-060 Car safeties. [§ IX, Rule 9.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-065 Brakes. [§ X, Rule 10.010, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-070 Car controls and safety devices. [§ XI, Rules 11.010-11.060, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-075 Hoisting machine mechanisms. [§ XII, Rules 12.010-12.040, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-080 Elevator car and counterweight buffers. [§ XIII, Rules 13.010-13.020, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-83-085 General requirements. [§ XIV, Rules 14.010-14.030, effective 5/15/64.] Repealed by 86-03-025 (Order 86-4), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

Chapter 296-88
SAFETY RULES FOR GRAIN ELEVATOR OPERATIONS

296-88-001 Foreword. [Foreword, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-010 Scope and application. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-020 Purpose. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-030 General requirements. [§ I, Rules 1.010—1.110, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-040 Entering storage type bins. [§ II, Rule 2.010, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-050 Entering silo type bins. [§ III, Rules 3.010—3.030, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-060 Inspection of shovel equipment. [§ IV, Rules 4.010—4.030, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-070 Railroad car safety. [§ V, Rules 5.010—5.080, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-080 Manlifts. [§ VI, Rule 6.010, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-090 Fumigation. [§ VII, Rules 7.010—7.110, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-100 Insecticides and disinfectants. [§ VIII, Rules 8.010 and 8.020, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-110 Structural requirements and safeguards. [§ IX, Rules 9.010—9.070, effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-120 Reference material. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

296-88-130 Glossary. [Rules (part), effective 1/2/65.] Repealed by 86-03-027 (Order 86-6), filed 1/10/86.

Chapter 296-90
SAFETY REQUIREMENTS FOR CANTILEVER HOISTS

296-90-010 Material hoist platforms. [Order 71-7, § 296-90-010, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-020 Guard rails. [Order 71-7, § 296-90-020, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-030 Tower construction. [Order 71-7, § 296-90-030, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-040 Hoisting machines. [Order 71-7, § 296-90-040, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-050 Car platform enclosure. [Order 71-7, § 296-90-050, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-060 Landing platforms. [Order 71-7, § 296-90-060, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-070 No rider posting. [Order 71-7, § 296-90-070, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-080 Maintenance, inspection and test periods. [Order 71-7, § 296-90-080, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-090 Compliance with codes. [Order 71-7, § 296-90-090, filed 6/17/71.] Repealed by 86-03-028 (Order 86-7), filed 1/10/86. Statutory Authority: RCW 70.87.080, 70.87.090 and 70.87.100.

296-90-100 Annual fee. [Order 71-7, § 296-90-100, filed 6/17/71.] Repealed by Order 74-36, filed 10/1/74.

Chapter 296-92
SAFETY RULES GOVERNING WHEELCHAIR LIFTING DEVICES

296-92-010 Definitions. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-010, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-020 Location, travel and speed. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-020, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-030 Guards and ramps. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-030, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-040 Supports. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-040, filed

12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-050 Frames, platforms and capacity. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-050, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-060 Controls and electrical equipment. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-060, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-070 Public assembly and institutional installations. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-070, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-080 Nonskid surfacing. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-080, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-090 Installation permits and acceptance inspections. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-090, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-100 Submission of plans for installation. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-100, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

296-92-110 Operation and maintenance manuals. [Statutory Authority: RCW 70.87.030. 81-01-034 (Order 80-26), § 296-92-110, filed 12/10/80.] Repealed by 86-03-029 (Order 86-8), filed 1/10/86.

Chapter 296-132
PUBLIC EMPLOYEES' COLLECTIVE BARGAINING RULES

296-132-005 Purpose. [Order 70-1, § 296-132-005, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-010 Policy. [Order 70-1, § 296-132-010, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-015 Construction. [Order 70-1, § 296-132-015, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-050 General. [Order 70-1, § 296-132-050, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-055 Petitioner. [Order 70-1, § 296-132-055, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-060 Authorized agent. [Order 70-1, § 296-132-060, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-065 Labor organization, lawful organization. [Order 70-1, § 296-132-065, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-070 Supervisor. [Order 70-1, § 296-132-070, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-075 Rule temporary. [Order 70-1, § 296-132-075, filed 3/10/70] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-100 Initiation. [Order 73-26, § 296-132-100, filed 12/10/73; Order 70-1, § 296-132-100, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-105 Filing of petition. [Order 73-26, § 296-132-105, filed 12/10/73; Order 70-1, § 296-132-105, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-110 Contents of petition—General. [Order 70-1, § 296-132-110, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-115 Contents of petition—Filed by public employees. [Order 73-26, § 296-132-115, filed 12/10/73; Order 70-1, § 296-132-115, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-120 Contents of petition—Filed by public employer. [Order 73-26, § 296-132-120, filed 12/10/73; Permanent and Emergency Order 70-13, § 296-132-120, filed 12/1/70, effective 1/1/71; Order 70-1, § 296-132-120, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-125 Intervention. [Order 73-26, § 296-132-125, filed 12/10/73; Order 70-1, § 296-132-125, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-130 Initial action. [Order 70-1, § 296-132-130, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-135 Petition—Amendments or withdrawal. [Order 70-1, § 296-132-135, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-140 Decertification. [Order 73-26, § 296-132-140, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-145 Severance. [Order 73-26, § 296-132-145, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-150 Determination of nature and scope. [Permanent and Emergency Order 70-13, § 296-132-150, filed 12/1/70, effective 1/1/71; Order 70-1, § 296-132-150, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-151 Unit clarification. [Order 73-26, § 296-132-151, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-152 Union membership. [Order 73-26, § 296-132-152, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-155 Special election. [Order 70-1, § 296-132-155, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-160 List of employees. [Order 73-26, § 296-132-160, filed 12/10/73; Order 70-1, § 296-132-160, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-165 Rule temporary. [Order 70-1, § 296-132-165, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-200 Selection of representation method. [Order 70-1, § 296-132-200, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-205 Two or more organizations. [Order 70-1, § 296-132-205, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-210 Examination of membership rolls. [Order 70-1, § 296-132-210, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-215 Use of authorization cards. [Order 70-1, § 296-132-215, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-220 Authorization cards—Acceptability. [Order 70-1, § 296-132-220, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-225 Conduct of election. [Order 73-26, § 296-132-225, filed 12/10/73; Order 70-1, § 296-132-225, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-226 Central filing—Arbitration and fact-finding. [Order 73-26, § 296-132-226, filed 12/10/73.] Repealed by

86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-250 Certification. [Order 70-1, § 296-132-250, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-255 Noncertification. [Order 70-1, § 296-132-255, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-260 Time extensions. [Order 73-26, § 296-132-260, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-265 Bypass of steps. [Order 73-26, § 296-132-265, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-300 Unfair labor practice—Who may file. [Order 70-1, § 296-132-300, filed 3/10/70.] See WAC 296-132-301.

296-132-301 Unfair labor practices—Who may file. [Order 73-26, § 296-132-301, filed 12/10/73; Permanent and Emergency Order 70-13, § 296-132-301, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-302 Unfair labor practice presumed—Change of conditions during bargaining. [Order 73-26, § 296-132-302, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-305 Filing of charges. [Order 70-1, § 296-132-305, filed 3/10/70.] See WAC 296-132-306.

296-132-306 Filing of charges. [Permanent and Emergency Order 70-13, § 296-132-306, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-310 Investigation. [Order 70-1, § 296-132-310, filed 3/10/70.] See WAC 296-132-311.

296-132-311 Investigation. [Permanent and Emergency Order 70-13, § 296-132-311, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-315 Remedies. [Order 70-1, § 296-132-315, filed 3/10/70.] See WAC 296-132-316.

296-132-316 Remedies. [Permanent and Emergency Order 70-13, § 296-132-316, filed 12/1/70, effective 1/1/71.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-320 Rules temporary. [Order 70-1, § 296-132-320, filed 3/10/70.] Repealed by Emergency and Permanent Order 70-13, filed 12/1/70, effective 1/1/71.

296-132-350 Appeal procedure. [Order 73-26, § 296-132-350, filed 12/10/73; Order 70-1, § 296-132-350, filed 3/10/70.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-360 Appeal briefs. [Order 73-26, § 296-132-360, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-370 Appeal briefs—Contents. [Order 73-26, § 296-132-370, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

296-132-380 Record on appeal. [Order 73-26, § 296-132-380, filed 12/10/73.] Repealed by 86-08-015 (Order 86-20), filed 3/25/86. Statutory Authority: RCW 51.04.020.

Chapter 296-150
FACTORY BUILT HOUSING AND GOVERNOR'S ADVISORY BOARD ADMINISTRATIVE RULES

296-150-010 Administration—Authority for factory-built housing code. [Order 73-25, § 296-150-010, filed 12/3/73; Order 71-1, § 296-150-010, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-015 Application and scope. [Order 73-25, § 296-150-015, filed 12/3/73; Order 71-1, § 296-150-015, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-020 Department services. [Order 73-25, § 296-150-020, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-025 Conditions of reciprocity. [Order 74-10, § 296-150-025, filed 4/8/74; Order 73-13, § 296-150-025, filed 7/31/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-026 Agreements with out-of-state jurisdictions. [Order 73-25, § 296-150-026, filed 12/3/73; Order 73-13, § 296-150-026, filed 7/31/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-027 Educational. [Order 73-25, § 296-150-027, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-050 Definitions—General. [Order 73-25, § 296-150-050, filed 12/3/73; Order 71-1, § 296-150-050, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-055 Definitions—A. Agency inspection. [Order 71-1, § 296-150-055, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-060 Definitions—Agency, listing. [Order 71-1, § 296-150-060, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-065 Definitions—Agency, testing. [Order 71-1, § 296-150-065, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-070 Definitions—Alteration or conversion. [Order 71-1, § 296-150-070, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-075 Definitions—Approved. [Order 71-1, § 296-150-075, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-080 Definitions—B. Building site. [Order 71-1, § 296-150-080, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-085 Definitions—C. Custom building. [Order 71-1, § 296-150-085, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-090 Definitions—D. Department. [Order 71-1, § 296-150-090, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-095 Definitions—Dwelling units. [Order 71-1, § 296-150-095, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-100 Definitions—E. Equipment. [Order 71-1, § 296-150-100, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-105 Definitions—F. Factory built housing (F.B.H.). [Order 71-1, § 296-150-105, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-110 Definitions—Field technical service. [Order 71-1, § 296-150-110, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-115 Definitions—First user. [Order 71-1, § 296-150-115, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-120 Definitions—G. No definition. [Order 71-1, § 296-150-120, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-130 Definitions—H. Habitable room. [Order 71-1, § 296-150-130, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-140 Definitions—I. Insignia. [Order 71-1, § 296-150-140, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-145 Definitions—Install. [Order 71-1, § 296-150-145, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-150 Definitions—J. No definition. [Order 71-1, § 296-150-150, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296–150–160 Definitions—K. No definition. [Order 71–1, § 296–150–160, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–170 Definitions—L. Labeled. [Order 71–1, § 296–150–170, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–175 Definitions—Listed. [Order 71–1, § 296–150–175, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–180 Definitions—Local enforcement agency. [Order 71–1, § 296–150–180, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–185 Definitions—M. Manufacture. [Order 71–1, § 296–150–185, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–190 Definitions—N. No definition. [Order 71–1, § 296–150–190, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–200 Definitions—O. No definition. [Order 71–1, § 296–150–200, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–210 Definitions—P. No definition. [Order 71–1, § 296–150–210, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–220 Definitions—Q. No definition. [Order 71–1, § 296–150–220, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–230 Definitions—R. Residential building. [Order 71–1, § 296–150–230, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–240 Definitions—S. Substantially prefabricated or assembled. [Order 71–1, § 296–150–240, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–245 Definitions—System. [Order 71–1, § 296–150–245, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–250 Definitions—T. No definition. [Order 71–1, § 296–150–250, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–260 Definitions—U. No definition. [Order 71–1, § 296–150–260, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–270 Definitions—V. No definition. [Order 71–1, § 296–150–270, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–280 Definitions—W. No definition. [Order 71–1, § 296–150–280, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–290 Definitions—X. No definition. [Order 71–1, § 296–150–290, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–300 Definitions—Y. No definition. [Order 71–1, § 296–150–300, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–310 Definitions—Z. No definition. [Order 71–1, § 296–150–310, filed 2/11/71.] Repealed by Order 73–25, filed 12/3/73.

296–150–315 Construction requirements. [Order 73–25, § 296–150–315, filed 12/3/73; Order 71–1, § 296–150–315, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–320 Electrical requirements. [Order 75–5, § 296–150–320, filed 3/5/75; Order 73–25, § 296–150–320, filed 12/3/73; Order 71–1, § 296–150–320, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–325 Mechanical requirements. [Order 73–25, § 296–150–325, filed 12/3/73; Order 71–1, § 296–150–325, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–330 Plumbing requirements. [Order 73–25, § 296–150–330, filed 12/3/73; Order 71–1, § 296–150–330, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–335 Code research and materials evaluation service. [Order 73–25, § 296–150–335, filed 12/3/73.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–400 Enforcement and administration—Enforcement. [Order 71–1, § 296–150–400, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–405 Enforcement and administration—Equipment and systems. [Order 71–1, § 296–150–405, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–410 Enforcement and administration—Department disapproval of listed or labeled equipment and systems. [Order 71–1, § 296–150–410, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–415 Alternates and equivalents. [Order 73–25, § 296–150–415, filed 12/3/73; Order 71–1, § 296–150–415, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–420 Inspections. [Order 73–25, § 296–150–420, filed 12/3/73; Order 71–1, § 296–150–420, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–423 Compliance control programs (CC). [Order 73–25, § 296–150–423, filed 12/3/73.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–424 Factory–built housing—Compliance control (FBH–CC). [Order 73–25, § 296–150–424, filed 12/3/73.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–425 Local enforcement agency—Compliance control (LEA–CC). [Order 73–25, § 296–150–425, filed 12/3/73; Order 71–1, § 296–150–425, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–430 Local enforcement agency application. [Order 73–25, § 296–150–430, filed 12/3/73; Order 71–1, § 296–150–430, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–435 Rights of local enforcement agency. [Order 73–25, § 296–150–435, filed 12/3/73; Order 71–1, § 296–150–435, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–440 The local enforcement agency responsibility. [Order 73–25, § 296–150–440, filed 12/3/73; Order 71–1, § 296–150–440, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–445 Manufacturer compliance control (M–CC). [Order 73–25, § 296–150–445, filed 12/3/73; Order 71–1, § 296–150–445, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–450 Independent inspection agency compliance control (IIA–CC). [Order 73–25, § 296–150–450, filed 12/3/73.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–500 Design plan approval—General. [Order 73–25, § 296–150–500, filed 12/3/73; Order 71–1, § 296–150–500, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–505 Design plan approval application. [Order 73–25, § 296–150–505, filed 12/3/73; Order 71–1, § 296–150–505, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–506 Design plan types and descriptions. [Order 73–25, § 296–150–506, filed 12/3/73.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–510 Engineering and test procedures. [Order 73–25, § 296–150–510, filed 12/3/73; Order 71–1, § 296–150–510, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296–150–515 Design plan requirements. [Order 73–25, § 296–150–515, filed 12/3/73; Order 71–1, § 296–150–515, filed 2/11/71.] Repealed by Order 77–8, filed 4/29/77, effective 6/1/77.

296-150-516 Technical report. [Order 73-25, § 296-150-516, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-520 Technical report—Live loads. [Order 71-1, § 296-150-520, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-525 Manufacturing in more than one location. [Order 73-25, § 296-150-525, filed 12/3/73; Order 71-1, § 296-150-525, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-530 Out-of-state applicant. [Order 73-25, § 296-150-530, filed 12/3/73; Order 71-1, § 296-150-530, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-535 Out-of-state applicant—Nonconforming application and plans. [Order 71-1, § 296-150-535, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-540 Manufacturers evidence of department approval. [Order 73-25, § 296-150-540, filed 12/3/73; Order 71-1, § 296-150-540, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-545 Design plan approval expiration. [Order 73-25, § 296-150-545, filed 12/3/73; Order 71-1, § 296-150-545, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-550 Revocation of approval. [Order 73-25, § 296-150-550, filed 12/3/73; Order 71-1, § 296-150-550, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-555 Changes to approved plans. [Order 73-25, § 296-150-555, filed 12/3/73; Order 71-1, § 296-150-555, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-560 Transfer of approvals. [Order 73-25, § 296-150-560, filed 12/3/73; Order 71-1, § 296-150-560, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-565 Change of name and address. [Order 73-25, § 296-150-565, filed 12/3/73; Order 71-1, § 296-150-565, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-570 Discontinuance of manufacture. [Order 73-25, § 296-150-570, filed 12/3/73; Order 71-1, § 296-150-570, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-575 Existing approvals. [Order 73-25, § 296-150-575, filed 12/3/73; Order 71-1, § 296-150-575, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-580 Compliance. [Order 73-25, § 296-150-580, filed 12/3/73; Order 71-1, § 296-150-580, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-585 Design plan approval—Custom building. [Order 71-1, § 296-150-585, filed 2/11/71.] Repealed by Order 73-25, filed 12/3/73.

296-150-590 Field erection. [Order 73-25, § 296-150-590, filed 12/3/73; Order 71-1, § 296-150-590, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-595 Proprietary material. [Order 73-25, § 296-150-595, filed 12/3/73; Order 71-1, § 296-150-595, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-600 Insignia—Insignia required. [Order 71-1, § 296-150-600, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-605 Application for insignia. [Order 73-25, § 296-150-605, filed 12/3/73; Order 71-1, § 296-150-605, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-606 Agreement of work completion (AWC). [Order 73-25, § 296-150-606, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-610 Alteration or conversion. [Order 73-25, § 296-150-610, filed 12/3/73; Order 71-1, § 296-150-610, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-615 Alteration or conversion—Denial of insignia. [Order 71-1, § 296-150-615, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-620 Alteration or conversion—Insignia removal. [Order 71-1, § 296-150-620, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-625 Lost or damaged insignia. [Order 73-25, § 296-150-625, filed 12/3/73; Order 71-1, § 296-150-625, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-630 Custom building. [Order 73-25, § 296-150-630, filed 12/3/73; Order 71-1, § 296-150-630, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-640 Unauthorized use. [Order 73-25, § 296-150-640, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-650 Unit identification. [Order 73-25, § 296-150-650, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-675 Components. [Order 73-25, § 296-150-675, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-680 Components application. [Order 73-25, § 296-150-680, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-685 Components approval. [Order 73-25, § 296-150-685, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-690 Components testing. [Order 73-25, § 296-150-690, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-695 Components fees and production reports. [Order 73-25, § 296-150-695, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-700 Fee schedule. [Order 73-25, § 296-150-700, filed 12/3/73; Order 71-1, § 296-150-700, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-800 Hearings—Public hearing. [Order 71-1, § 296-150-800, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-805 Hearings—Board of appeals. [Order 71-1, § 296-150-805, filed 2/11/71.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

GOVERNOR'S ADVISORY BOARD ADMINISTRATIVE RULES

WAC 296-150-815 - 296-150-875

296-150-815 Foreword. [Order 73-25, § 296-150-815, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-820 Definitions. [Order 73-25, § 296-150-820, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-825 Officers. [Order 73-25, § 296-150-825, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-830 Internal management. [Order 73-25, § 296-150-830, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-835 Duties. [Order 73-25, § 296-150-835, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-840 Hearings. [Order 73-25, § 296-150-840, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-845 Appearance and practice before the board. [Order 73-25, § 296-150-845, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

296-150-850 Solicitation of business unethical. [Order 73-25, § 296-150-850, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.
296-150-855 Standards of ethical conduct. [Order 73-25, § 296-150-855, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.
296-150-860 Appearance by former employee. [Order 73-25, § 296-150-860, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.
296-150-865 Former employee as expert witness. [Order 73-25, § 296-150-865, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.
296-150-870 Computation of time. [Order 73-25, § 296-150-870, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.
296-150-875 Administrative Procedure Act. [Order 73-25, § 296-150-875, filed 12/3/73.] Repealed by Order 77-8, filed 4/29/77, effective 6/1/77.

Chapter 296-04 WAC
INTERNAL RULES--STATE APPRENTICESHIP AND TRAINING COUNCIL

AFFIRMATIVE ACTION PLAN OF THE WASHINGTON STATE APPRENTICESHIP COUNCIL TO PROMOTE EQUAL EMPLOYMENT OPPORTUNITY IN APPRENTICESHIP AND TRAINING

WAC

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296-04-010 Regular meetings.
296-04-015 Definitions.
296-04-040 Council meetings—When held—Notice—Who may attend—Quorum.
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296-04-05001 Plant program defined.
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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-04-020 Special meetings. [§ II, filed 3/23/60.] See WAC 296-04-030(1). This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.

296-04-030 Executive meetings. [§§ III and IV, filed 10/11/65; §§ III and IV, filed 2/12/65; § II A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-040.

296-04-050 Minutes of meetings. [§ VI, filed 10/11/65; § VI, filed 2/12/65; § IV, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-070 Ex officio members. [§ VIII, filed 10/11/65; § VIII, filed 2/12/65; § V A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-080 Agencies consulted. [§ IX, filed 10/11/65; § IX, filed 2/12/65; § V B, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-060.

296-04-100 Official action. [§ XI, filed 10/11/65; § XI, filed 2/12/65; § VI A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71.

296-04-110 Interim action. [§ VI B, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.

296-04-120 Duration of and change of policies. [§ VII, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.

296-04-130 Submission of petitions and requests. [§ XIV; filed 10/11/65; § XIV, filed 2/12/65; § VIII, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-040.

296-04-140 Where matters sent. [§ XV, filed 10/11/65; § XV, filed 2/12/65; § VIII A, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-045.

296-04-150 Delegation to director of apprenticeship. [§ IX, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.

296-04-170 Program deviation from approved standards. [§ XVII, filed 10/11/65; § XVII, filed 2/12/65; § X B; filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-180 Program cancellation. [§ XVIII, filed 10/11/65; § XVIII, filed 2/12/65; § X C, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-190 Effect of program cancellation. [§ XIX, filed 10/11/65; § XIX, filed 2/12/65; § X D, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-195 Proposed programs must conform to council standards. [§ XX, filed 10/11/65; § XX, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-200 Certificates of completion. [§ XXI, filed 10/11/65; § XXI, filed 2/12/65; § XI, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-270.

296-04-210 Construction limit of rules. [§ XII, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.

296-04-220 Director may obtain consultants. [§ XIII, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.
296-04-225 Consultants. [§ XXII, filed 10/11/65; § XXII, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71.
296-04-230 Role of consultants. [§ XIV A, filed 3/23/60.] This section has been decodified as they were omitted from "The rules and regulations of the Washington state apprenticeship council" which were filed on 2/12/65 and 10/11/65.
296-04-240 Dissemination of information by consultants limited. [§ XXIII, filed 10/11/65; § XXIII, filed 2/12/65; § XIV B, filed 3/23/60.] Repealed by Order 71-3, filed 3/25/71.
296-04-250 Signatures accepted. [§ XXIV, filed 10/11/65; § XXIV, filed 2/12/65.] Repealed by Order 71-3, filed 3/25/71. See WAC 296-04-160.
296-04-290 Appeal procedure. [Order 76-4, § 296-04-290, filed 2/20/76; Order 72-18, § 296-04-290, filed 11/8/72; Order 71-3, § 296-04-290, filed 3/25/71.] Repealed by 79-09-003 (Order 79-13), filed 8/2/79. Statutory Authority: RCW 49.04.010.
296-04-490 Appeal. [Order 71-13, § 296-04-490, filed 10/28/71.] Repealed by 80-03-004 (Order 80-2), filed 2/8/80. Statutory Authority: RCW 49.04.010.
296-04-500 Registration fees for apprenticeship and training agreements and standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-500, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-501 Registration fees for apprenticeship and training agreements. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-501, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-502 Registration fees for apprenticeship and training standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-502, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-503 Registration fees for apprenticeship and training standards—Limitation on fees. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-503, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-504 Registration fees—Application to existing apprenticeship and training agreements and standards. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-504, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-505 Registration fees for apprenticeship and training agreements and standards—Effect of failure to make timely payment. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-505, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.
296-04-506 Registration fees for apprenticeship and training agreements and standards—Mailing address. [Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-506, filed 10/29/82.] Repealed by 84-04-024 (Order 84-1), filed 1/25/84. Statutory Authority: 1983 c 90.

INTERNAL RULES

WAC 296-04-001 Foreword. The Washington State Apprenticeship and Training Act, RCW 49.04.010 – 49.04.910, establishes the council and its administrative arm, the apprenticeship and training division of the department of labor and industries. The intention of the council and department in promulgating and adopting these rules is to establish a uniform procedure to be followed by state and local apprenticeship and training committees in presenting matters to the state apprenticeship and training council and further to establish standards by which the council can operate to effectuate its statutory obligations set forth in the apprenticeship act.

All policies and rules of the council are designed to strengthen apprenticeship and training in the state of Washington, as well as to explain related factors established under existing state and federal laws. The council, as the responsible legislative organ governing apprenticeship and training, requests the cooperation and assistance of all interested persons, organizations, and agencies functioning within the framework of the rules and regulations.

[Order 71-3, § 296-04-001, filed 3/25/71; Foreword, filed 10/11/65, filed 2/12/65, filed 3/23/60.]

WAC 296-04-005 Apprenticeship and training agreements—Proposed standards. The Washington state apprenticeship and training council is the body responsible for matters concerning apprenticeship and training in the state of Washington. The principal function of the council is to approve and register apprenticeship and training agreements. Persons or organizations desiring to institute an apprenticeship or training program must first prepare proposed standards which conform to these rules and to RCW 49.04.050. The standards must also include the composition of and general rules for the committee which will administer the program. The supervisor, or Washington state apprenticeship coordinators, are available to give assistance in this task.

These standards, which will be either a plant program or committee program as defined herein, must then be presented to the supervisor at least 45 days before the regular meeting at which the council will be requested to consider such proposed standards. The standards proposed will then be discussed by the council and approved, disapproved, or approved subject to enumerated changes. The council, at its meetings, will allow changes made for clerical errors and additions of standard approved language deleted from the proposed standard if authorized representatives of all concerned are present and authorized to accept changes. The council will not accept changes at its meetings in the format or language not deemed standard by the council.

The committee thus set up then begins functioning. Its duties are to run the day to day operations of the apprenticeship and training program. It is charged with operating the program in accordance with the standards as approved by the council. It is charged with accepting or rejecting applicants for apprenticeship or training, registering accepted applicants as apprentices or trainees with the supervisor of apprenticeship and training, removing apprentices or trainees from the program in accordance with the standards and informing the supervisor of any matters which affect the standing of

individuals as apprentices or trainees. Persons not registered with the supervisor as apprentices or trainees cannot be recognized as apprentices or trainees by the council.

The supervisor and his staff may be consulted on any matters concerning apprenticeship and training, and they will provide any information concerning apprenticeship training which is available to them. They are also required to investigate any discrepancies between the actual and required operation of any program and conduct systematic reviews of the operation of all programs. The supervisor may recommend cancellation of any program which is not operated in accordance with its approved standards after notice of violation is given in accordance with the provisions of WAC 296-04-270(3).

The supervisor and the council will act to assist in the resolution of any complaints against local committees, or other organizations administering apprenticeship agreements, by any apprentices who have completed their probationary period, as provided in WAC 296-04-295.

[Statutory Authority: Chapter 49.04 RCW. 85-22-035 (Order 85-31), § 296-04-005, filed 11/1/85. Statutory Authority: RCW 49.04-.010. 80-03-004 (Order 80-2), § 296-04-005, filed 2/8/80; Order 71-3, § 296-04-005, filed 3/25/71.]

WAC 296-04-010 Regular meetings. The council shall hold regular (quarterly) business meetings at such locations and times within the state, that will best serve apprenticeship. Notice of meetings, when called by the chairman, shall be sent to all council members, ex officio members, approved joint apprenticeship committees, and may be sent to such other person, persons, organizations or agency whose presence is desired, thirty days prior to such meetings.

[§ II, filed 10/11/65; § II, filed 2/12/65; § 1, filed 3/23/60.]

WAC 296-04-015 Definitions. Whenever in these rules and regulations, the following words shall have these meanings:

(1) "Council" shall mean the Washington state apprenticeship and training council established pursuant to RCW 49.04.010.

(2) The words "apprenticeship committee" shall mean a state or local joint apprenticeship committee established pursuant to RCW 49.04.040 and/or a committee administering a plant program.

(3) The words "regular meeting" shall mean a public meeting of the council as described in WAC 296-04-040(1).

(4) The term "special meeting" shall mean a public meeting of the council as described in WAC 296-04-040(2).

(5) The word "supervisor" shall mean the supervisor of apprenticeship and training appointed pursuant to RCW 49.04.030.

(6) The term "agreement" shall mean an apprenticeship agreement and/or training agreement.

(7) The term "plant program" is defined in WAC 296-04-050.

(8) The term "individual agreement" shall mean a written agreement between an apprentice and/or trainee and either his employer or an apprenticeship committee acting as agent for the employer.

(9) The term "committee program" shall mean an apprenticeship agreement described in WAC 296-04-270 (1)(a).

(10) The term "on-the-job training program" shall mean a program described in WAC 296-04-280.

(11) The term "trainee" shall mean a person registered with the supervisor pursuant to WAC 296-04-270 or 296-04-280.

(12) The term "apprentice" shall mean a person registered with the supervisor pursuant to an apprenticeship training program pursuant to WAC 296-04-270 for purposes of chapter 49.04 RCW and these rules.

(13) The term "standards" shall mean a written agreement setting forth a plan containing all terms and conditions for the qualifications, recruitment, selection, employment, and training of apprentices, as further defined in RCW 49.04.050.

(14) The term "registration" shall mean the maintenance of records of apprenticeship and training agreements and of apprenticeship and training standards.

(15) The term "sponsor" shall mean any plant, firm, facility, association, committee, or organization operating an apprenticeship and training program and in whose name the program is registered or is to be registered.

(16) The term "department" shall mean the department of labor and industries.

[Statutory Authority: 1982 1st ex.s. c 39 §§ 1, 3. 82-22-042 (Order 82-30), § 296-04-015, filed 10/29/82. Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-015, filed 2/8/80; Order 76-4, § 296-04-015, filed 2/20/76; Order 71-13, § 296-04-015, filed 10/28/71; Order 71-3, § 296-04-015, filed 3/25/71; § I, filed 10/11/65; § I, filed 2/12/65.]

WAC 296-04-040 Council meetings--When held--Notice--Who may attend--Quorum. Council meetings shall be of two kinds—regular and special meetings.

(1) **Regular meetings.** Regular meetings of the council shall be held at least quarterly during each year beginning on the third Thursday of the months of January, April, July and October. Such regular meetings shall be held at such locations within the state of Washington which in the opinion of the council will best promote the purposes of the Washington State Apprenticeship and Training Act. All meetings of the council shall be open to the general public, and all actions, transaction of official business of the council, collective decision, commitment or promise, and all collective discussion, acquisition and exchange of facts in the course of deliberation prior to any action of the council shall only be made in meetings open to the public consistent with the provisions of the Open Public Meetings Act of 1971 (chapter 250, Laws of 1971 1st ex. sess.) and chapter 34.04 RCW. No member of the general public will be required as a condition upon attending any council meeting to register his name or give any other information or to fulfill any condition precedent to his attendance at council meetings. Notice of such meetings shall

be given to all approved committees and may be given to any persons, organizations, or agencies at the direction of the council, or any member thereof, and in addition shall be given to any newspaper, news service, television or radio station which has requested to be notified of council meetings. Committee programs, plant programs, or amendments thereto, may be approved or disapproved only at regular meetings.

(2) **Special meetings.** Special meetings of the council may be called by the chairman or by majority of the council members by delivering personally or by mail written notice to each member of the council and all approved joint apprenticeship and training committees and to each newspaper of general circulation, television or radio station which has on file with the council or the supervisor a request to be notified of such special meeting of the council, which shall be ineffective unless it sets forth the date, time and location of the meeting and specifies the business to be transacted by the council at such special meeting. Final disposition may not be made of any matter at such special meeting other than specified in the notice of such special meeting. Special meetings shall be open to the general public to the same extent as the quarterly regular meetings of the council. Notice of special meetings must be delivered personally or by mail at least twenty–four hours before the time specified in the notice of such special meeting, except in the case of rule changes pursuant to chapter 34.04 RCW which must be at least 20 days before the time specified in the notice.

(3) **Notice of council meetings.** Notice of each quarterly regular meeting of the council shall be given to all council members by the supervisor at least 20 days before the date set for the meeting and in addition shall give notice to such other persons and organizations as specified in subsection (1) of this section.

(4) **Notice of special meetings of the apprenticeship council.** Notice of special meetings of the council may be given by the supervisor at the request of the chairman or the majority of the members of the council in the manner and form specified in subsection (2) of this section. If such notices are not given, no action taken by the council shall be effective at such meetings unless each regular council member at such meeting, or prior thereto, gives a written waiver of notice of such meeting to be filed by the supervisor and the notice shall be deemed to be waived by any member who is present at the meeting at the time it convenes. *Provided*, That rule change may not be made at such special meeting unless the requirements of chapter 34.04 RCW have been complied with.

(5) **Submission of petitions or requests.** The council will not act upon any petition or request which is addressed to the council unless such a petition or request is submitted in writing to the supervisor at least 45 days prior to the date of such quarterly regular meeting, and any petitions or requests not submitted 45 days prior to such quarterly meeting shall be deferred to the next quarterly regular meeting of the council and the petitioner shall be so notified by the supervisor.

(6) **Quorum.** Two–thirds of the council members entitled to vote shall be considered a quorum.

[Statutory Authority: Chapter 49.04 RCW. 85–22–035 (Order 85–31), § 296–04–040, filed 11/1/85. Statutory Authority: RCW 49.04–.010. 79–03–023 (Order 79–3), § 296–04–040, filed 2/22/79; Order 72–8, § 296–04–040, filed 6/8/72; Order 71–3, § 296–04–040, filed 3/25/71; § V, filed 10/11/65; § V, filed 2/12/65; § III, filed 3/23/60.]

WAC 296–04–045 Supervisor–administrator of council. The supervisor shall be the administrator of the council. He shall perform the duties listed in RCW 49–.04.030 and, in addition, he shall register all agreements conforming to WAC 296–04–270 in his office, review programs and their operation, and recommend cancellation of any committee program, or plant program previously registered which is not operated in conformity with its agreement. All documents concerning apprenticeship or training agreements, their revision or any other matters affecting apprenticeship or training shall be sent to him. Such documents may be addressed to: Supervisor of Apprenticeship and Training, Department of Labor and Industries, Olympia, Washington.

[Order 71–3, § 296–04–045, filed 3/25/71.]

WAC 296–04–05001 Plant program defined. For the purpose of these rules a "plant program," over which the council will assume jurisdiction and serve as a joint apprenticeship and training committee, pursuant to the authority of RCW 49.04.040, means: An apprenticeship agreement or agreements with an employer which conforms in form and substance with the applicable provisions of these rules and chapter 49.04 RCW in an apprenticeable trade, craft or occupation in which a major portion of the work to be performed by the apprentice for such employer is within a geographical area not served by an approved local joint apprenticeship and training committee. The apprenticeship agreement must specify the number of required hours for completion of apprenticeship, which must equal or exceed the average number of hours for such trade, craft or occupation within this state, which in any event shall not be less than 2,000 hours of reasonably continuous employment.

[Statutory Authority: RCW 49.04.010. 80–03–004 (Order 80–2), § 296–04–050 (codified as WAC 296–04–05001), filed 1/8/80; Order 72–18, § 296–04–050, filed 11/8/72.]

WAC 296–04–060 Officers, appointment, duties—Ex officio members. The officers of the council shall be a chairman, vice chairman, and secretary.

(1) Chairman and vice chairman.

(a) The chairman and vice chairman shall be elected by majority vote of the council members present and voting at the quarterly business meeting nearest to the month of June in each odd–numbered year. They shall hold office for a term of two years and until their successors are elected, or until their death or resignation.

(b) The chairman shall preside over all meetings, conducting them in accordance with *Robert's Rules of Order* as modified by these rules and regulations. He may vote in all matters before the council as a regular member and may participate in discussion of all matters

before the council. He shall have such other powers and duties as are now or hereafter provided in these rules and regulations and as are usual or necessary to chairmen, as provided in *Robert's Rules of Order.*

(c) The vice chairman shall preside over all council meetings in the absence of the chairman. He shall have all of the powers and duties of chairman when he is so presiding.

(2) Secretary:

(a) The supervisor shall be the secretary of the council. He shall hold the office of secretary during his tenure as supervisor.

(b) The secretary shall, with the assistance of a recording secretary, keep minutes of all special and regular meetings. He shall keep a copy of the minutes of all regular and special meetings on file in his office as supervisor. He shall forward copies of minutes of all meetings to all regular and ex officio members of the council and shall make copies of the minutes of all meetings available to the public upon written request. He shall have other powers and duties as are provided in these rules and regulations and as are usually or necessarily concomitant with the office of secretary.

(3) Ex officio members of the council shall have the full right to participate in discussion of any matters before the council. They shall have no vote.

[Statutory Authority: Chapter 49.04 RCW. 85-22-035 (Order 85-31), § 296-04-060, filed 11/1/85; Order 76-4, § 296-04-060, filed 2/20/76; Order 71-3, § 296-04-060, filed 3/25/71; § VII, filed 10/11/65; § VII, filed 2/12/65; § V, filed 3/23/60.]

WAC 296-04-090 Rules of order. *Robert's Rules of Order* shall prevail at all meetings unless otherwise provided for by these rules.

[§ X, filed 10/11/65; § X, filed 2/12/65; § VI, filed 3/23/60.]

WAC 296-04-105 Retroactivity. The council may make any action or decision which it takes retroactive to the date of the previous business session.

[Order 71-3, § 296-04-105, filed 3/25/71; § XII, filed 10/11/65; § XII, filed 2/12/65.]

WAC 296-04-115 Amendment. These rules and regulations may be amended by a two-thirds majority of regular council members. All council members, the supervisor, the committees and any other interested persons shall be promptly notified of any changes in writing. Such amendments shall be promulgated in accordance with the Administrative Procedure Act, Title 34 RCW.

[Order 71-3, § 296-04-115, filed 3/25/71; § XIII, filed 10/11/65; § XIII, filed 2/12/65.]

WAC 296-04-125 Rule change-procedures and forms. The procedure and form for petitions requesting the making, amendment, or repeal of a rule are set forth in WAC 296-08-540, 296-08-550, 296-08-560, 296-08-570 and 296-08-590(2). The procedure and form for requests for declaratory rulings are set forth in WAC 296-08-580, 296-08-590(1). Such petitions and requests shall be addressed to the Washington state apprenticeship and training council and mailed to the supervisor of apprenticeship and training at his address hereinbefore in WAC 296-04-045 stated.

[Order 71-3, § 296-04-125, filed 3/25/71.]

WAC 296-04-160 Apprenticeship committees. Apprenticeship committees shall be appointed in accordance with the provisions of RCW 49.04.040. Such committees shall have the duties prescribed by statute, these rules and the approved standards under which they operate. Committees shall function, administrate or relinquish authority only with the consent of the council. On any petition addressed to the council or the supervisor, only the signature of the elected chairman and secretary of the committee shall be accepted unless the apprenticeship committee has petitioned the council to recognize and accept the signature of another person. Such a petition must be signed by a quorum of the members of the petitioning apprenticeship committee. It is the council's view that joint apprenticeship and training committees are not state agencies but rather only quasi-public entities performing services jointly for management and labor by assistance to the apprenticeship program.

[Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-160, filed 11/14/78; Order 76-4, § 296-04-160, filed 2/20/76; Order 72-8, § 296-04-160, filed 6/8/72; Order 71-3, § 296-04-160, filed 3/25/71; § XVI, filed 10/11/65; § XVI, filed 2/12/65; § X A, filed 3/23/60.]

WAC 296-04-165 Union waiver. (1) Under a program proposed for registration by an employer or employers' association, and where the standards, collective bargaining agreement or other instrument, provides for participation by a union in any manner in the operation of the substantive matters of the apprenticeship program, and such participation is exercised, written acknowledgement of union agreement or "no objection" to the registration is required. Where no such participation is evidenced and practiced, the employer or employers' association shall simultaneously furnish to the union, if any, which is the collective bargaining agent of the employees to be trained, a copy of its application for registration and of the apprenticeship program. The registration agency shall provide a reasonable time period of not less than 30 days nor more than 60 days for receipt of union comments, if any, before final action on the application for registration and/or approval.

(2) Where the employees to be trained have no collective bargaining agent, an apprenticeship program may be proposed for registration by an employer or group of employers.

[Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-165, filed 11/14/78.]

WAC 296-04-260 Merit awards. The supervisor, with the approval of the council, may issue awards for meritorious service to persons who have given at least

five years of continuous service to the apprenticeship and training program of this state.

[Order 71-3, § 296-04-260, filed 3/25/71; § XXV, filed 10/11/65; § XXV, filed 2/12/65.]

WAC 296-04-270 Apprenticeship agreements--Types--Standards--Registration, review, cancellation, reregistration--Certificate of completion. (1) The following apprenticeship agreements shall be recognized pursuant to RCW 49.04.060:

(a) A written agreement between an association of employers and an organization of employees describing the conditions of training for apprentices.

(b) A written statement of an employer or a written agreement between an employer and an employee organization describing the conditions of training apprentices. The former agreement shall be recognized only if there is no bona fide employee organization in the plant affected by the agreement.

(c) A written agreement between an employer and an individual apprentice describing the conditions of apprenticeship.

(2) Apprenticeship agreements shall conform to the following standards:

(a) Committee programs, plant programs, and on-the-job training programs must contain the provisions required by RCW 49.04.050 and, in addition, shall contain:

(i) Provision for nondiscrimination in the selection of apprentices in substantially the following form:

Each sponsor of an apprenticeship program shall include in its standards the following equal opportunity pledge: "The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington state apprenticeship and training council and Title 29, Part 30 of the Code of Federal Regulations."

(ii) Provision that there shall be no discrimination on the basis of race, color, creed, sex, or national origin after selection during all phases of employment during apprenticeship.

(iii) Provision that adequate records of the selection process must be kept for a period of at least five years and will be made available to the council or its designated representative on request. Such records must include a brief summary of any interviews and the conclusions reached on each of the specific factors which are part of the total judgment concerning each applicant.

(iv) Provision for local committee rules and regulations consistent with these rules and the applicable apprenticeship agreement.

(b) Any proposed standards for apprenticeship must be substantially similar to any standards for apprenticeship already approved by the council for the industry, craft or trade in question to the end that there is general statewide uniformity of such standards in each industry, trade or craft.

(c) The statement of the progressively increasing scale of wages, RCW 49.04.050(5), shall provide for a set percentage of a specified journeyman wage. In no event shall the specified journeyman wage from which the apprentice's percentages are computed fall below eighty percent of the established prevailing basic wage computed by the industrial statistician of the department of labor and industries pursuant to chapter 39.12 RCW. Where the department of labor and industries has not computed such a prevailing basic wage, the prevailing basic wage for the craft for the area set by the United States Department of Labor pursuant to the Davis-Bacon Act, 40 USC § 276, may be used.

(d) A sample apprenticeship agreement which the council approves is available on request from the supervisor.

(3) Registration, review, cancellation, reregistration.

(a) All individual agreements shall be registered with the supervisor and subject to his approval.

(b) The supervisor and his staff, in the performance of their field work, shall conduct a systematic review of all plant and committee programs and shall take appropriate action, including recommendation of cancellation, when they find that any program is not being operated according to these rules and regulations or according to its applicable standards.

(c) When any program is found to be operating in a manner inconsistent with or contrary to these rules and regulations or its established plant or committee program, the supervisor shall notify the offending committee, person, firm or agency of the violation. If the supervisor does not receive notice, within 60 days, of action taken to correct such violations, the supervisor may take whatever action he deems necessary, including recommendation of cancellation of the apprenticeship or training program and agreement to the council.

(d) If the supervisor deems it necessary to recommend cancellation of an apprenticeship or training program, he shall do so in writing to each council member, stating in detail the reasons for his recommendation. A copy of said recommendation shall be mailed to the last known address of each member of the committee administering said program, or to those persons responsible for said program, together with notice that the council shall consider the recommendation at its next regularly scheduled meeting more than 30 days subsequent to the date of the recommendation and that all interested persons may present evidence or testimony regarding said recommendation. The council shall decide the question before it upon majority vote of the members present and voting and shall notify all interested parties of its decision, together with the reasons for it, in writing.

(e) The cancellation of any program or agreement shall automatically effect a cancellation of any agreement registered thereunder, provided that any organization or firm not responsible for the violations causing the cancellation may petition the council for approval of such cancelled agreement or program as a new program.

(f) Certificates of completion shall be issued at the request of the appropriate committee. An affidavit of the secretary of the committee concerned shall accompany the request, which affidavit shall state that the apprentice has successfully completed the apprenticeship program of that committee, and that he has been an active, registered participant of that committee's program for at least six months.

[Statutory Authority: RCW 49.04.050. 87-01-046 (Order 86-43), § 296-04-270, filed 12/15/86. Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-270, filed 2/8/80; Order 76-4, § 296-04-270, filed 2/20/76; Order 71-3, § 296-04-270, filed 3/25/71; § XXVI, filed 10/11/65; § XXVI, filed 2/12/65.]

WAC 296-04-275 Reciprocity. Apprenticeship programs and standards of employers and unions in other than the building and construction industry, which jointly form a sponsoring entity on a multistate basis and are registered pursuant to all requirements of Title 29 Code of Federal Regulations, Part 29, as adopted February 15, 1977 by any recognized state apprenticeship agency/council or by the bureau of apprenticeship and training, U.S. Department of Labor, shall be accorded approval reciprocity by the Washington state apprenticeship and training council, if such reciprocity is requested by the sponsoring entity.

[Statutory Authority: RCW 49.04.010. 78-12-022 (Order 78-21), § 296-04-275, filed 11/14/78; 78-09-056 (Order 78-13), § 296-04-275, filed 8/22/78.]

WAC 296-04-280 On-the-job training programs. (1) Training programs may be set up in the same manner as apprenticeship programs, with any exceptions authorized by the council provided that no on-the-job training program shall be established or authorized where there is a parallel apprenticeship program in existence. A training program shall be any program which requires 4,000 or less hours of employment for completion. All of these rules shall apply to them as to apprenticeship agreements and programs, except that they will be approved by the supervisor subject to the review of the council.

(2) A pattern standard for a trainee program is available from the supervisor on request.

[Order 76-4, § 296-04-280, filed 2/20/76; Order 71-3, § 296-04-280, filed 3/25/71.]

WAC 296-04-295 Complaint review procedure. (1) Any controversy or difference that cannot be resolved to the satisfaction of the parties by the local committee or other organization administering the agreement may be submitted by any apprentice who has completed his or her probationary period to the apprenticeship division for resolution.

(a) The apprentice shall request the local committee or other organization to reconsider any action that is the basis for the complaint within 30 days of the action. The local committee or other organization shall, within 30 days, provide a written notification of its decision on the request for reconsideration to the apprentice and this notification shall be considered the final action of the committee. The apprentice shall submit a written complaint describing the controversy to the supervisor of the apprenticeship division within 30 days of the final action taken on the matter by the local committee or other organization.

(b) The written complaint shall set out the specific matter(s) complained of and the facts and circumstances relevant to the complaint. Any documents or correspondence relevant to the complaint shall be attached to the complaint. The apprentice shall send a copy of the complaint to the interested local committee or other organization.

(c) Any controversy that involves matters covered by a collective bargaining agreement are not subject to the complaint review procedure established by this rule.

(2) Upon receipt of a complaint from an apprentice, the supervisor of the apprenticeship division shall investigate the controversy.

(a) The supervisor shall have 30 working days within which to complete the investigation. During the investigation, the supervisor shall attempt to effect a settlement of the controversy between the parties. If the controversy is not settled during the investigation, the supervisor, at the conclusion of the investigation shall issue a written decision resolving the controversy.

(b) The apprentice and the local committee or other organization shall fully cooperate with the supervisor during the investigation by providing any information or documents requested by the supervisor.

(c) The supervisor may, in his or her discretion, delegate the investigation of a complaint by an apprentice to any employee of the apprenticeship division.

(3) If the apprentice, local committee or other organization is dissatisfied with the decision of the supervisor, the dissatisfied party may request the apprenticeship council to review the decision.

(a) The request shall be made to the council in writing within 30 days of the issuance of the supervisor's decision and shall specify the reasons that the review is requested. The party requesting review shall provide a copy of the request to the other parties to the controversy.

(b) The council shall conduct an informal hearing to consider the request for review of the supervisor's decision. The hearing shall be held in conjunction with the council's regular quarterly meeting unless special circumstances require a hearing at a different time.

(i) At the informal hearing, the council shall review the decision issued by the supervisor and all records of the investigation. The council may also accept testimony or documents from any person, including the supervisor and his or her staff, who has knowledge relating to the controversy.

(ii) Parties at the informal hearing may be represented by counsel and may, at the council's discretion, present argument concerning the controversy. The council shall not apply formal rules of evidence.

(iii) After the informal hearing, the council shall issue a written decision resolving the controversy within 30 days. The decision of the council may be to affirm the decision of the supervisor and in that case the decision of

the supervisor becomes the decision of the council. All parties to the informal hearing shall be sent a copy of the council's decision. The chairman may sign the decision for the council.

(4) The investigation or review of any controversy under this rule by the supervisor or the council shall not suspend any action taken or decision made by the local committee or other organization pending the issuance of a decision resolving the matter.

[Statutory Authority: RCW 49.04.010. 80-03-004 (Order 80-2), § 296-04-295, filed 2/8/80; 79-09-003 (Order 79-13), § 296-04-295, filed 8/2/79.]

AFFIRMATIVE ACTION PLAN

WAC 296-04-300 Promulgation. WAC 296-04-300 through 296-04-480 of this chapter sets forth the affirmative action plan of the Washington state apprenticeship and training council and establishes the policies and procedures to promote equality of opportunity in apprenticeship programs approved by the Washington state apprenticeship and training council and are adopted in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations as amended and promulgated by the United States Department of Labor. These policies and procedures apply to the recruitment and selection of apprentices, and to all conditions of employment and training during apprenticeship; and the procedures established provide for review of apprenticeship programs, for registering apprenticeship programs, for processing complaints, and for deregistering noncomplying apprenticeship programs. These policies and procedures also provide for continued or withdrawal of recognition of apprenticeship programs. The purpose of the following sections is to promote equality of opportunity in apprenticeship by prohibiting discrimination based on race, color, religion, national origin, or sex in apprenticeship programs, by requiring affirmative action to provide equal opportunity in such apprenticeship programs, and by coordinating these policies and procedures with other equal opportunity programs.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-300, filed 11/14/78; Order 77-3, § 296-04-300, filed 1/25/77; Order 71-13, § 296-04-300, filed 10/28/71.]

WAC 296-04-310 Authority. The authority for the implementation and adoption of these rules and policies and procedures hereinafter set forth affecting the approval and registration of an apprenticeship program is vested in the Washington state apprenticeship council in accordance with the provisions of RCW 49.04.010 through 49.04.910.

[Order 71-13, § 296-04-310, filed 10/28/71.]

WAC 296-04-320 Definitions. For the purpose of the interpretation of WAC 296-04-300 through 296-04-480, the following terms shall have the following meanings:

(1) "Council" shall mean the Washington state apprenticeship and training council established pursuant to RCW 49.04.010.

(2) "Department" shall mean the United States Department of Labor.

(3) "Supervisor" shall mean the supervisor of apprenticeship and training appointed pursuant to RCW 49.04.030.

(4) "Employer" means any person or organization employing an apprentice whether or not the apprentice is enrolled with such person or organization or with some other person or organization.

(5) "Apprenticeship program" means a program registered and approved by the Washington state apprenticeship council as meeting the standards of the council for apprenticeship.

(6) "Sponsor" means any person or organization operating an apprenticeship program irrespective of whether such person or organization is an employer.

[Order 71-13, § 296-04-320, filed 10/28/71.]

WAC 296-04-330 Equal opportunity standards. Obligations of sponsors. Each sponsor of an apprenticeship program shall:

(1) Recruit, select, employ and train apprentices during their apprenticeship, without discrimination because of race, color, religion, national origin, or sex; and

(2) Uniformly apply rules and regulations concerning apprentices, including but not limited to, equality of wages, periodic advancement, promotion, assignment of work, job performance, rotation among all work processes of the trade, imposition of penalties or other disciplinary action, and all other aspects of the apprenticeship program administered by the program sponsors; and

(3) Take affirmative action to provide equal opportunity in apprenticeship, including adoption of an affirmative action plan as required by the provisions of WAC 296-04-340.

(4) **Equal opportunity pledge.** Each sponsor of an apprenticeship program shall include in its standards the following equal opportunity pledge: "The recruitment, selection, employment, and training of apprentices during their apprenticeship shall be without discrimination because of race, color, religion, national origin, or sex. The sponsor will take affirmative action to provide equal opportunity in apprenticeship and will operate the apprenticeship program as required by the rules of the Washington state apprenticeship and training council and Title 29, Part 30 of the Code of Federal Regulations."

(5) **Programs presently registered.** Each sponsor of a program registered with the council as of the effective date of these rules shall within 90 days following that effective date take the following action:

(a) Include in the standards of its apprenticeship program the equal opportunity pledge prescribed by subsection (4) of this section; and

(b) Adopt an affirmative action plan as required by WAC 296-04-340; and

(c) Adopt a selection procedure as required by WAC 296-04-350. A sponsor adopting a selection method under WAC 296-04-350 (2), (3) or (4), shall prepare and have available for submission upon request, copies of its amended standards, affirmative action plans, and selection procedure. A sponsor adopting a selection method under WAC 296-04-350(5) shall submit to the council copies of its standards, affirmative action plan, and selection procedure in accordance with the requirements of WAC 296-04-350 (5)(a).

(6) **Sponsors seeking new registration.** A sponsor of a program seeking new registration and approval of the council shall submit copies of its proposed standards, affirmative action plan, selection procedures, and such other information as may be required. The program shall be registered and approved [and] [if] such standards, affirmative action plan, and selection procedure meet the requirements of these rules.

(7) **Programs subject to approved equal employment opportunity programs.** A sponsor shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350, if it submits to the council satisfactory evidence that it is in compliance with an equal employment opportunity program providing for the selection of apprentices and for affirmative action in apprenticeship including goals and timetables for women and minorities which has been approved as meeting the requirements of Title VII of the Civil Rights Act of 1964, as amended, (42 U.S.C. 2000e, et seq.) and its implementing regulations published in Title 29 of the Code of Federal Regulations, Chapter XIV, or Executive Order 11246, as amended, and its implementing regulations at Title 41 of the Code of Federal Regulations, Chapter 60: *Provided*, That programs approved, modified or renewed subsequent to the effective date of this amendment will qualify for this exception only if the goals and timetables for minorities and women for the selection of apprentices provided for in such programs are equal to or greater than the goals required under this part.

(8) **Program with fewer than five apprentices.** A sponsor of a program in which fewer than five apprentices are indentured shall not be required to adopt an affirmative action plan under WAC 296-04-340, or a selection procedure under WAC 296-04-350: *Provided*, That such program was not adopted to circumvent the requirements of this part.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-330, filed 11/14/78; Order 71-13, § 296-04-330, filed 10/28/71.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-340 Affirmative action plans. (1) Adoption of a sponsor's commitment to equal opportunity in recruitment, selection, employment, and training of apprentices shall include the adoption of a written affirmative action plan.

(2) Definition of affirmative action. Affirmative action is not mere passive nondiscrimination. It includes procedures, methods and programs for the identification, positive recruitment, training, and motivation of present and potential minority and female (minority and nonminority) apprentices including the establishment of goals and timetables. It is action which will equalize opportunity in apprenticeship so as to allow full utilization of the work potential of minorities and women. The overall result to be sought is equal opportunity in apprenticeship for all individuals participating in or seeking entrance to the labor force of this state.

(3) Outreach and positive recruitment. An acceptable affirmative action plan must also include adequate provisions for outreach and positive recruitment that would reasonably be expected to increase minority and female participation in apprenticeship by expanding the opportunity of minorities and women to become eligible for apprenticeship selection. In order to achieve these objectives, sponsors shall undertake activities such as those listed below. It is not contemplated that each sponsor necessarily will include all of the listed activities in its affirmative action program. The scope of the affirmative action program will depend on all the circumstances including the size and type of the program and its resources. However, the sponsor will be required to undertake a significant number of appropriate activities in order to enable it to meet its obligations under these rules. The affirmative action plan shall set forth the specific steps the sponsor intends to take in the areas listed below. Whenever special circumstances warrant, the council may provide from any funds made available to it for such purpose, such financial or other assistance it deems necessary to implement the requirements of this paragraph.

(a) Dissemination of information concerning the nature of apprenticeship, requirements for admission to apprenticeship, availability of apprenticeship opportunities, sources of apprenticeship applications, and the equal opportunity policy of the sponsor. For programs accepting applications only at specified intervals, such information shall be disseminated at least 30 days in advance of the earliest date for application at each interval. For programs customarily receiving applications throughout the year, such information shall be regularly disseminated, but not less than semiannually. Such information shall be given to the council, local schools, employment service offices, women's centers, outreach programs and community organizations which can effectively reach minorities and women and shall be published in newspapers which are circulated in the minority community and among women as well as the general areas in which the program sponsor operates.

(b) Participate in any workshops conducted by employment service agencies for the purpose of familiarizing school, employment service and other appropriate personnel with the apprenticeship system and current opportunities therein.

(c) Cooperation with the local school boards and vocational education systems to develop programs for preparing students to meet the standards and criteria

required to qualify for entry into apprenticeship programs.

(d) Internal communication of the sponsor's equal opportunity policy in such a manner as to foster understanding, acceptance, and support among the sponsor's various officers, supervisors, employees, and members and to encourage such persons to take the necessary action to aid the sponsor in meeting its obligations under these rules.

(e) Engaging in such programs as outreach for the positive recruitment and preparation of potential applicants for apprenticeship; where appropriate and feasible, such programs shall provide for pretesting experience and training. If no programs are in existence, the sponsor shall seek to initiate these programs, or, when available, to obtain financial assistance from the council. In initiating and conducting these programs, the sponsor may be required to work with other sponsors and appropriate community organizations. The sponsor shall also initiate programs to prepare women and encourage women to enter traditionally male programs.

(f) To encourage the establishment and utilization of programs of preapprenticeship, preparatory trade training, or others designed to afford related work experience or to prepare candidates for apprenticeship, a sponsor shall make appropriate provision in its affirmative action plan to assure that those who complete such programs are afforded full and equal opportunity for admission into the apprenticeship program.

(g) Utilization of journeymen to assist in the implementation of the sponsor's affirmative action program.

(h) Granting advance standing or credit on the basis of previously acquired experience, training, skills, or aptitude for all applicants equally.

(i) Admitting to apprenticeship persons whose age exceeds the maximum age for admission to the program, where such action is necessary to assist the sponsor in achieving its affirmative action obligations.

(j) Appropriate action as to ensure that the recruitment, selection, employment, and training of apprentices during apprenticeship, shall be without discrimination because of race, color, religion, national origin, or sex; such as: General publication of apprenticeship opportunities and advantages in advertisements, industry reports, articles, etc.; use of present minority and female apprentices and journeymen as recruiters; career counseling; periodic auditing of affirmative action programs and activities; and development of reasonable procedures between the sponsor and the employers of apprentices to ensure that equal employment opportunity is being granted including reporting systems, on site reviews, briefing sessions, etc. The affirmative action programs shall set forth the specific steps the sponsors intend to take in the above areas under this subsection (3). Whenever special circumstances warrant, the council may provide such financial or other assistance from funds available to it for that purpose, as it deems necessary to implement the above requirements.

(4) Goals and timetables.

(a) A sponsor adopting a selection method under WAC 296-04-350 (2) or (3), which determines on the basis of analysis described in subdivision (e) that it has deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the admission of minority and/or female (minority and nonminority) applicants into the eligibility pool.

(b) A sponsor adopting a selection method under WAC 296-04-350 (4) or (5), which determines on the basis of the analysis described in subdivision (e) that it has deficiencies in terms of the underutilization of the minorities and/or women in the craft or crafts represented by the program shall include in its affirmative action plan percentage goals and timetables for the selection of minority and female (minority and nonminority) applicants for the apprenticeship program.

(c) "Underutilization" as used in this subsection refers to the situation where there are fewer minorities and/or women (minority and nonminority) in the particular craft or crafts represented by the program than would reasonably be expected in view of an analysis of the specific factors in subdivision (e) of this section. Where, on the basis of the analysis, the sponsor determines that it has no deficiencies, no goals and timetables need be established. However, where no goals and timetables are established, the affirmative action plan shall include a detailed explanation why no goals and timetables have been established.

(d) Where the sponsor fails to submit goals and timetables as part of its affirmative action plan or submits goals or timetables which are unacceptable, and the council determines that the sponsor has deficiencies in terms of underutilization of minorities or women (minority and nonminority) within the meaning of this section, the council shall establish goals and timetables applicable to the sponsor for the admission of minority and female (minority and nonminority) applicants into the eligibility pool for selection of apprentices, as appropriate. The sponsor shall make good faith efforts to obtain these goals and timetables in accordance with the requirements of this section.

(e) Analysis to determine if deficiencies exist. The sponsor's determination as to whether goals and timetables shall be established shall be based on an analysis of at least the following factors, which analysis shall be set forth in writing as part of the affirmative action plan.

(i) The size of the working age minority and female (minority and nonminority) population in the program sponsor's labor market area;

(ii) The size of the minority and female (minority and nonminority) labor force in the program sponsor's labor market area;

(iii) The percentage of the minority and female (minority and nonminority) participation as apprentices in the particular craft as compared with the percentage of minorities and women (minority and nonminority) in the labor force in the program sponsor's labor market area;

(iv) The percentage of minority and female (minority and nonminority) participation as journeymen employed by the employer or employers participating in the program as compared with the percentage of minorities and

women (minority and nonminority) in the sponsor's labor market area and the extent to which the sponsor should be expected to correct any deficiencies through the achievement of goals and timetables for the selection of apprentices;

(v) The general availability of minorities and women (minority and nonminority) with present or potential capacity for apprenticeship in the program sponsor's labor market area.

(f) Establishment and attainment of goals and timetables. The goals and timetables shall be established on the basis of the sponsor's analysis of its underutilization of minorities and women and its entire affirmative action program. A single goal for minorities and a separate single goal for women is acceptable unless a particular group is employed in a substantially disparate manner in which case separate goals shall be established for such group. Such separate goals would be required, for example, if a specific minority group of women were underutilized even though the sponsor had achieved its standards for women generally. In establishing the goals, the sponsor should consider the results which could be reasonably expected from its good faith efforts to make its overall affirmative action program work. Compliance with these requirements shall be determined by whether the sponsor has met its goals within its timetable, or failing that, whether it has made good faith efforts to meet its goals and timetables. Its "good faith efforts" shall be judged by whether it is following its affirmative action program and attempting to make it work, including evaluation and changes in its program where necessary to attain the maximum effectiveness toward the attainment of its goals. However, in order to deal fairly with program sponsors, and with women who are entitled to protection under the goals and timetables requirements, during the first 12 months after the effective date of these regulations, the program sponsor would generally be expected to set a goal for women for the entering year class at a rate which is not less than 50 percent of the proportion women are of the workforce in the program sponsor's labor market area and set a percentage goal for women in each class beyond the entering class which is not less than the participation rate of women currently in the preceding class. At the end of the first 12 months after the effective date of these regulations, sponsors are expected to make appropriate adjustments in goal levels. See WAC 296-04-370(2).

(g) Data and information. The supervisor shall make available to program sponsors data and information on minority and female (minority and nonminority) labor force characteristics for each standard metropolitan statistical area, and for other special areas as appropriate.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-340, filed 11/14/78; Order 77-3, § 296-04-340, filed 1/25/77; Order 71-13, § 296-04-340, filed 10/28/71.]

WAC 296-04-350 Selection of apprentices. (1) **Obligations of sponsors.** In addition to development of a written affirmative action plan to ensure that minorities and women have an equal opportunity for selection as apprentices and otherwise ensure the prompt achievement of full and equal opportunity in apprenticeship, each sponsor shall further provide in its affirmative action program that the selection of apprentices shall be made under one of the methods specified in the following subsections (2) through (5) of this section.

(2) **Selection methods.** The sponsor shall adopt one of the following methods of selecting apprentices:

(a) Selection on basis of rank from pool of eligible applicants. A sponsor may select apprentices from a pool of eligible applicants created in accordance with the requirements of subdivision (c) of this subsection on the basis of the rank order of scores of applicants on one or more qualification standards where there is a significant statistical relationship between rank order of scores and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedure set forth in guidelines on employee selection procedures published at 41 CFR Part 60-3.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (g) of this subsection.

(c) Creation of pool of eligibles. A pool of eligibles shall be created from applicants who meet the qualifications of minimum legal working age and the sponsor's minimum physical requirements; or from applicants who meet qualification standards in addition to minimum legal working age: *Provided,* That any additional qualification standards conform with the following requirements:

(i) Qualification standards. The qualification standards and the procedures for determining such qualification standards shall be stated in detail and shall provide criteria for the specific factors and attributes to be considered in evaluating applicants for admission to the pool. The score required under each qualification standard for admission to the pool shall also be specified. All qualification standards, and the score required on any standard for admission to the pool, shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool, and performance in the apprenticeship program. In demonstrating such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. Qualifications shall be considered as separately required so that the failure of an applicant to obtain the specified score under a single qualification standard shall disqualify the applicant from admission to the pool.

(ii) Aptitude tests. Any qualification standard for admission to the pool consisting of aptitude test scores shall be directly related to job performance, as shown by significant statistical relationships between the score on the aptitude tests required for admission to the pool, and performance in the apprenticeship program. In determining such relationship, the sponsor shall follow the procedures set forth in 41 CFR Part 60-3. The requirements of this item (ii) shall also be applicable to aptitude tests utilized by a program sponsor which are administered by a state employment agency, or any

other person, agency or organization engaged in the selection or evaluation of personnel. A national test developed and administered by a national joint apprenticeship committee will not be approved by the United States Department of Labor unless such test meets the requirements of this subdivision.

(iii) Educational attainments. All educational attainments or achievements as qualifications for admission to the pool shall be directly related to job performance, as shown by a significant statistical relationship between the score required for admission to the pool and performance in the apprenticeship program. In demonstrating such relationship the sponsor shall meet the requirements of 41 CFR Part 60-3. School records or a passing grade on the general educational development tests recognized by the state or local public instruction authority shall be evidence of educational achievement. Education requirements shall be applied uniformly to all applicants.

(d) Oral interviews. Oral interviews shall not be used as a qualification standard for admission into an eligibility pool. However, once an applicant is placed in the eligibility pool, and prior to selection for apprenticeship from the pool, he or she may be required to submit to an oral interview. Oral interviews shall be limited to such objective questions as may be required to determine the fitness of applicants to enter the apprenticeship program, but shall not include questions relating to qualifications previously determined in gaining entrance to the eligibility pool. When an oral interview is used, each interviewer shall record the questions and the general nature of the applicant's answers, and shall prepare a summary of any conclusions. Each applicant rejected from the pool of eligibles on the basis of an oral interview shall be given a written statement of such rejection, the reasons therefor, and the appeal rights available to the applicant.

(e) Notification of applicants. All applicants who meet the requirements for admission shall be notified and placed in the eligibility pool. The program sponsors shall give each rejected applicant who is not selected for the pool or the program notice of his or her rejection, including the reason for the rejection, the requirements for admission to the pool of [the] eligibles, and the appeal rights available to the applicant.

(f) Goals and timetables. The sponsor shall establish, where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340 (4)(a) through (f).

(g) Compliance. A sponsor shall be deemed to be in compliance with its commitments under subdivision (f) of this subsection (2) if it meets its goals or timetables or if it makes a good faith effort to meet these goals and timetables. In the event of the failure of the sponsor to meet its goals and timetables, it shall be given an opportunity to demonstrate that it has made every "good faith effort" to meet its commitments (see WAC 296-04-430 (4)(f)). All the actions for the sponsor shall be reviewed and evaluated in determining whether such good faith efforts have been made.

(3) **Random selection from pool of eligible applicants.**

(a) Selection. A sponsor may select apprentices from a pool of eligible applicants on a random basis. The method of random selection is subject to approval by the council. Supervision of the random selection process shall be by an impartial person or persons selected by the sponsor, but not associated with the administration of the apprenticeship program. The time and place of the selection, and the number of apprentices to be selected, shall be announced. The place of the selection shall be open to all applicants and the public. The names of apprentices drawn by this method shall be posted immediately following the selection at the program sponsor's place of business.

(b) Requirements. The sponsor adopting this method of selecting apprentices shall meet the requirements of subdivisions (c) through (e) of subsection (2) of this section relating to the creation of a pool of eligibles, oral interviews and notification of applicants.

(c) Goals and timetables. The sponsor shall establish where required by WAC 296-04-340(4), percentage goals and timetables for the admission of minorities and women (minority and nonminority) into the pool of eligibles in accordance with the provisions of WAC 296-04-340 (4)(d) through (f).

(d) Compliance. Determinations as to the sponsor's compliance with its obligations under these rules shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(4) **Selection from pool of current employees.**

(a) Selection. A sponsor may select apprentices from an eligibility pool of the workers already employed by the program sponsor in a manner prescribed by a collective bargaining agreement where such exists, or by the sponsor's established promotion policy. The sponsor adopting this method of selecting apprentices shall establish goals and timetables for the selection of minority and female apprentices, unless the sponsor concludes, in accordance with the provisions of WAC 296-04-340 (4)(d) through (f), that it does not have deficiencies in terms of underutilization of minorities and/or women (minority and nonminority) in the apprenticeship of journeymen crafts represented by the program.

(b) Compliance. The determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section.

(5) **Alternative selection methods.** Selection. The sponsor may select apprentices by means of any other method, including its present selection method: *Provided,* That the sponsor meets the following requirements:

(a) Selection method and goals and timetables. Within 90 days of the effective date of these rules, the sponsor shall submit to the council, through its supervisor, the revised selection method it [proposed] [proposes] to use along with the rest of its written affirmative action program including, where required by WAC 296-04-340(4), its percentage goals and timetables for the selection of minority and/or female (minority and nonminority) applicants for apprenticeship and its written analysis, upon which such goals and timetables, or lack

thereof, are based. The establishment of goals and timetables shall be in accordance with the provisions of WAC 296-04-340 (4)(d) through (f). The sponsor may not implement any such [selection] method [until the council has approved the selection method] as meeting the requirements of subdivision (b) of this subsection (5) and has approved the remainder of its affirmative action program including its goals and timetables. If the council fails to act upon the selection method and the affirmative action program within 30 days of its submission, the sponsor then may implement the selection method until acted upon by the council.

(b) Qualification standards. Apprentices shall be selected on the basis of objective and specific qualification standards. Examples of such standards are fair aptitude tests, school diplomas or equivalent, occupationally essential health requirements, fair interviews, school grades, and previous work experience. Where interviews are used, adequate records shall be kept including a brief summary of each interview and the conclusions on each of the specific factors, e.g., motivation, ambition, and willingness to accept direction which are part of the total judgment. In applying any such standards, the sponsor shall meet the requirements of 41 CFR Part 60-3.

(6) **Compliance.** Determination as to the sponsor's compliance with its obligations under these regulations shall be in accordance with the provisions of subdivision (g) of subsection (2) of this section. Where a sponsor, despite its good faith efforts, fails to meet its goals and timetables within a reasonable period of time, the sponsor may be required to make appropriate changes in its affirmative action program to the extent necessary to obtain maximum effectiveness toward the attainment of its goals. The sponsor may also be required to develop and adopt an alternative selection method, including a method prescribed by the council where it is determined that the failure of the sponsor to meet its goals is attributable in substantial part to the selection method. Where the sponsor's failure to meet its goals is attributable in substantial part to its use of the qualification standard which has adversely affected the opportunities of minorities and/or women (minority and nonminority) for apprenticeship, the sponsor may be required to demonstrate that such qualification standard is directly related to job performance, in accordance with the provisions of subsection (2), subdivision (c), item (i), of this section.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-350, filed 11/14/78; Order 71-13, § 296-04-350, filed 10/28/71.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-351 Employer's responsibility. In affirmative action programs under WAC 296-04-350(5) alternate selection methods where the employer does the selecting, the employer shall sign an agreement assuming responsibility for adherence to the council's affirmative action plan contained in these regulations and 29 CFR Part 30.

[Order 76-4, § 296-04-351, filed 2/20/76.]

WAC 296-04-360 Existing lists of eligibles and public notice. A sponsor adopting a selection method under WAC 296-04-350 (2) or (3), and a sponsor adopting a selection method under WAC 296-04-350(5), who determines that there are [few] [fewer] minorities and/or women (minority and nonminority) on its existing list of eligibles than would be reasonably expected in view of the analysis described in WAC 296-04-340 (4)(e), shall discard all existing eligibility lists upon adoption of the selection methods required by these rules. New eligibility pools shall be established and lists of eligibility pools shall be posted at the sponsor's place of business. Sponsors shall establish a reasonable period of not less than two weeks for accepting applications for admission to the apprenticeship program. There shall be at least 30 days of public notice in advance of the earliest date for application for admission to the apprenticeship program (see WAC 296-04-340(3) on affirmative action with respect to dissemination of information). applicants who have been placed in a pool of eligibles shall be retained on lists of eligibles subject to selection for a period of two years. Applicants may be removed from the list at an earlier date by their request or following their failure to respond to [an] apprentice job opportunity given by certified mail, return receipt requested. Applicants who have been accepted in the program shall be afforded a reasonable period of time in light of the customs and practices of the industry for reporting for work. All applicants shall be treated equally in determining such period of time. It shall be the responsibility of the applicant to keep the sponsor informed of his or her current mailing address. Upon request, a sponsor may restore to the list of eligibles applicants who have been removed from the list or who have failed to respond to an apprenticeship job opportunity.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-360, filed 11/14/78; Order 71-13, § 296-04-360, filed 10/28/71.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-370 Records. Obligations of sponsors. (1) Each sponsor shall keep adequate records including a summary of the qualifications of each applicant, the basis for evaluation and for selection or rejection of each applicant, the records pertaining to the interviews of applicants, the original application for each applicant, information relative to the operation of the apprenticeship program, including but not limited to job assignment, promotion, demotion, layoff, or termination, rates of pay, or other forms of compensation or conditions of work, and separately, hours of training provided, and

any other records pertinent to the determination of compliance with these regulations as may be required by the council. The records pertaining to the individual applicants, selected or rejected, shall be maintained in such manner as to permit identification of minority and female (minority and nonminority) participants.

(2) **Affirmative action plans.** Each sponsor must retain a statement of its affirmative action plan required by WAC 296-04-340 for the prompt achievement of full and equal opportunity in apprenticeship, including all data and analysis made pursuant to the requirements of WAC 296-04-340. Sponsors shall review their affirmative action plans annually and update them where necessary, including the goals and timetables.

(3) **Qualification standards.** Each sponsor must maintain evidence that its qualification standards have been validated in accordance with the requirements set forth in WAC 296-04-350(2).

(4) **Records of state apprenticeship council.** The records of the council shall be kept in the offices of the supervisor, which records shall include registration requirements, individual program standards, registration records, program compliance reviews and investigations, and any other records pertinent to the determination of compliance with these rules, as may be required by the United States Department of Labor, and shall report to the department as may be required.

(5) **Maintenance of records.** The records required by these rules (WAC 296-04-300 through 296-04-480) and any other information relevant to compliance with Part 30 of Title 29 of the Code of Federal Regulations shall be maintained for five years and made available upon request to the United States Department of Labor or other authorized representative.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-370, filed 11/14/78; Order 71-13, § 296-04-370, filed 10/28/71.]

WAC 296-04-380 Compliance reviews. (1) Conduct of compliance reviews. The supervisor shall regularly conduct systematic reviews of the apprenticeship programs in order to determine the extent to which sponsors are complying with these rules and will also conduct compliance reviews when circumstances, including a receipt of complaints not referred to a private review body, pursuant to WAC 296-04-400 (2)(a), so warrant, and take appropriate action regarding programs which are not in compliance with the requirements of these rules. Compliance reviews will consist of comprehensive analysis and evaluations of each aspect of the apprenticeship program, including on-site investigations and audits.

(2) **Reregistration.** Sponsors seeking reregistration shall be subject to a compliance review as described in subsection (1) of this section by the supervisor as part of the reregistration process.

(3) **New registrations.** Sponsors seeking new registrations shall be subject to a compliance review as described in subsection (1) of this section by the supervisor as part of the registration process.

(4) **Voluntary compliance.** Where the compliance review indicates that the sponsor is not operating in accordance with these rules, the supervisor shall notify the sponsor in writing of the results of the review and make a reasonable effort to secure voluntary compliance on the part of the program sponsor within a reasonable time before undertaking sanctions under WAC 296-04-420. In the case of sponsors seeking new registrations, the supervisor will provide appropriate recommendations to the sponsor to enable it to achieve compliance for registration purposes.

[Order 71-13, § 296-04-380, filed 10/28/71.]

WAC 296-04-390 Noncompliance with federal and state equal opportunity requirements. A pattern or practice of noncompliance by a sponsor (or where the sponsor is a joint apprenticeship committee, by one of the parties represented on each committee) with federal or state laws or regulations requiring equal opportunity may be grounds for the imposition of sanctions in accordance with WAC 296-04-420, if such noncompliance is related to the equal employment opportunity of apprentices and/or graduates of such an apprenticeship program under these rules. The sponsor shall take affirmative steps to assist and cooperate with employers and unions in fulfilling their equal employment opportunity obligations.

[Order 71-13, § 296-04-390, filed 10/28/71.]

WAC 296-04-400 Complaint procedure. (1) **Filing.**

(a) Any apprentice or applicant for apprenticeship who believes that he or she has been discriminated against on the basis of race, color, religion, national origin, or sex with regard to apprenticeship or that the equal opportunity standards with respect to his or her selection have not been followed in the operation of an apprenticeship program may, personally or through an authorized representative, file a complaint with the council, or, at the apprentice's or applicant's election, with a private review body established pursuant to subdivision (c) of this subsection (1). The complaint shall be in writing and shall be signed by the complainant. It must include the name, address, and telephone number of the person allegedly discriminated against, the program sponsor involved, and a brief description of the circumstances of the failure to apply the equal opportunity standards provided for in these rules.

(b) The complaint must be filed not later than 180 days from the date of the alleged discrimination or specified failure to follow the equal opportunity standards; and, in the case of complaints filed directly with review bodies designated by program sponsors to review such complaints, any referral of such complaint by the complainant to the council must occur within the time limitation stated above or 30 days from the final decision of such review body, whichever is later. The time may be extended by the council for good cause shown.

(c) Sponsors are encouraged to establish fair, speedy, and effective procedures for a review body to consider complaints of failure to follow the equal opportunity

standards. A private review body established by the program sponsor for this purpose should number three or more responsible persons from the community serving in this capacity without compensation. Members of the review body should not be directly associated with the administration of an apprenticeship program. Sponsors may join together in establishing a review body to serve the needs of programs within the community.

(2) **Processing of complaints.**

(a) When the sponsor has designated a review body for reviewing complaints, the council, unless the complainant has indicated otherwise or unless the council has determined that the review body will not effectively enforce the equal opportunity standards, the supervisor, upon receiving a complaint, shall refer the complaint to the review body.

(b) The supervisor shall, within 30 days following the referral of the complaint to the review body, obtain the reports from the complainant and the review body as to the disposition of the complaint. If the complaint has been satisfactorily adjusted and there is no other indication of failure to apply equal opportunity standards, the case shall be closed and the parties appropriately informed.

(c) When a complaint has not been resolved by the review body within 90 days or where, despite satisfactory resolution of the particular complaint by the review body, there is evidence that equal opportunity practices of the apprenticeship program are not in accordance with these rules, the council may conduct such compliance review as found necessary, and will take all necessary steps to resolve the complaint.

(3) Where no review body exists, the council may conduct such compliance review as found necessary in order to determine the facts of the complaint, and obtain such other information relating to compliance with these regulations as the circumstances warrant.

(4) Sponsors shall provide written notice of the above complaint procedure to all applicants for apprenticeship and all apprentices.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-400, filed 11/14/78; Order 71-13, § 296-04-400, filed 10/28/71.]

WAC 296-04-410 Adjustments in schedule for compliance review or complaint processing. If in the judgment of the council, a particular situation warrants and requires special processing, and either expedited or extended determination, it shall take the steps necessary to permit such determination, if it finds that no person or party affected by such determination will be prejudiced by such special processing.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-410, filed 11/14/78; Order 71-13, § 296-04-410, filed 10/28/71.]

WAC 296-04-420 Sanctions. (1) Where the supervisor, as a result of a compliance review or other reason, determines that there is reasonable cause to believe that an apprenticeship program is not operating in accordance with these rules and voluntary corrective action has not been taken by the program sponsor, the council shall institute proceedings to deregister the program or it shall refer the matter to the equal employment opportunity commission or to the attorney general with recommendations for the institution of a court action under Title VII of the Civil Rights Act of 1964, as amended, or to the attorney general for other court action as authorized by law.

(2) The deregistration proceedings shall be conducted according to the following procedures:

(a) The council shall notify the sponsor, in writing, that a determination of reasonable cause has been made under subsection (1) of this section and that the apprenticeship program may be deregistered unless, within 15 days of the receipt of the notice, the sponsor requests a hearing. The notification shall specify the facts on which the determination is based.

(b) If within 15 days of the receipt of the notice provided for in subdivision (a) of this subsection (2), the sponsor mails a request for hearing, the supervisor shall convene an appropriate hearing.

(c) The council shall make a final decision on the basis of the record before it, which shall consist of the compliance review file and other evidence presented. In its discretion, the council may allow the sponsor a reasonable time to achieve voluntary corrective action. If the council's decision is that the apprenticeship program is not operating in accordance with these rules, the apprenticeship program may be deregistered. In each case in which deregistration is ordered, the council shall make public notice of the order and shall notify the sponsor and the complainant, if any.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-420, filed 11/14/78; Order 76-4, § 296-04-420, filed 2/20/76; Order 71-13, § 296-04-420, filed 10/28/71.]

WAC 296-04-430 Reinstatement of program registration. Any apprenticeship program deregistered pursuant to these rules may be reinstated upon presentation of adequate evidence to the council that the apprenticeship program is operating in accordance with these rules.

[Order 71-13, § 296-04-430, filed 10/28/71.]

WAC 296-04-440 Adoption of consistent state plans. All apprenticeship programs registered with the council shall comply with the requirements of WAC 296-04-300 through 296-04-480 within 90 days after the effective date of these rules.

(1) The United States Department of Labor shall have authority to conduct compliance reviews to determine whether the Washington state affirmative action plan or any state apprenticeship program registered with the council is being administered or operated in accordance with the provisions of Title 29, Part 30 of the Code of Federal Regulations.

(2) It shall be the responsibility of the council to take the necessary action to bring a noncomplying program into compliance with these rules. In the event the council fails to fulfill this responsibility, the secretary of the United States Department of Labor may withdraw the

recognition for federal purposes of any or all state apprenticeship programs, in accordance with the procedures for deregistration of programs registered by the department, or refer the matter to the attorney general of the United States with a recommendation for the institution by the attorney general of a court action under Title 7 of the Civil Rights Act of 1964.

(3) The council shall notify the United States Department of Labor of any state apprenticeship program disapproved and deregistered by it.

(4) Any state apprenticeship program disapproved and deregistered by the council for noncompliance with the requirements of these rules or Title 29, Part 30 of the Code of Federal Regulations may, within 15 days of the receipt of the notice of disapproval and deregistration, appeal to the United States Department of Labor to set aside the determination of the state apprenticeship and training council. The department shall make its determination on the basis of the record. The department may grant the state program sponsor, the state apprenticeship and training council, and the complainant, if any, the opportunity to present oral or written argument.

(5) **Withdrawal of recognition.** Whenever the United States Department of Labor determines that reasonable cause exists to believe that the council has not adopted or implemented a plan in accordance with the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations, it shall give notice to the council and to appropriate state sponsors of this determination, stating specifically wherein the state's plan failed to meet such requirements and the United States Department of Labor proposes to withdraw recognition for federal purposes from the state apprenticeship and training council unless within 15 days of the receipt of the notice, the council complies with the provisions of Title 29, Part 30, of the Code of Federal Regulations or mails a request for a hearing to the secretary of the United States Department of Labor.

(6) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council neither complies with the provisions of Title 29, Part 30 of the Code of Federal Regulations, nor mails a request for a hearing, the secretary of the United States Department of Labor shall notify the council of the withdrawal of recognition.

(7) If within 15 days of the receipt of the notice provided for in subsection (5) of this section, the council mails a request for a hearing, the secretary of the United States Department of Labor shall proceed in accordance with Title 29, Section 30.16 of the Code of Federal Regulations.

(8) If a hearing is conducted in accordance with Title 29, Section 30.16 of the Code of Federal Regulations, the secretary of the United States Department of Labor upon receipt of the proposed findings and recommended decision of the hearing officer shall make a final decision whether the council has adopted or implemented a plan in accordance with equal opportunity requirements of Title 29 of Part 30 of the Code of Federal Regulations.

(9) If the secretary of the United States Department of Labor determines to withdraw from recognition, for federal purposes, from the state apprenticeship and training council, the secretary shall notify the council of this determination. The secretary shall also notify the state's sponsors that within 30 days of the receipt of the notice the United States Department of Labor shall cease to recognize, for federal purposes, each state apprenticeship program unless the state program sponsor requests registration with the department. Such registration may be granted contingent upon finding that the state apprenticeship and training program is operating in accordance with the requirements of Title 29, Part 30 of the Code of Federal Regulations.

(10) If the secretary of the United States Department of Labor determines to withdraw recognition, for federal purposes, from the state apprenticeship [and training council], such recognition may be reinstated upon presentation of adequate evidence to the secretary of the United States Department of Labor that the council has adopted and implemented a plan carrying out the equal opportunity requirements of Title 29, Part 30 of the Code of Federal Regulations.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-440, filed 11/14/78; Order 71-13, § 296-04-440, filed 10/28/71.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-04-460 Intimidatory or retaliatory acts. Any intimidation, threat, coercion, or retaliation by or with the approval of any sponsor against any person for the purpose of interfering with any right or privilege secured by Title VII of the Civil Rights Act of 1964, as amended Executive Order 11246, as amended, or because he or she has made a complaint, testified, assisted or participated in any manner in any investigation proceeding, or hearing under these rules or Title 29, Part 30 of the Code of Federal Regulations, shall be considered noncompliance with the equal opportunity standards of these rules. The identity of complainants shall be kept confidential except to the extent necessary to carry out the purpose of these rules, including the conduct of any investigation, hearing, or judicial proceeding arising therefrom.

[Statutory Authority: RCW 49.04.010. 78-12-021 (Order 78-20), § 296-04-460, filed 11/14/78; Order 71-13, § 296-04-460, filed 10/28/71.]

WAC 296-04-470 Nondiscrimination. The commitments contained in the sponsor's affirmative action program are not intended and shall not be used to discriminate against any qualified applicant or apprentice on the basis of race, color, religion, national origin, or sex.

[Order 71-13, § 296-04-470, filed 10/28/71.]

WAC 296-04-480 Exemptions. Requests for exemption from these rules, or any part thereof, shall be made in writing to the supervisor, and shall contain a

statement of reasons supporting the request. The exemptions may be granted for good cause by the council, or the secretary of the United States Department of Labor, and the council shall notify the United States Department of Labor of any such exemptions granted affecting a substantial number of employers and the reasons therefor. These variances are intended to apply only to WAC 296-04-300 through 296-04-480, the affirmative action plan of the state apprenticeship and training council.

[Order 76-4, § 296-04-480, filed 2/20/76; Order 71-13, § 296-04-480, filed 10/28/71.]

Chapter 296-06 WAC
PUBLIC RECORDS

WAC

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296-06-99001 Appendix B—Form—Request for public records under the provisions of chapter 1, Laws of 1973 (Initiative 276).

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-06-060 Substantive rules, general policy statements and interpretations of general applicability. [Order 73-12, § 296-06-060, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-070 Public records available. [Order 73-12, § 296-06-070, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-160 Procedure for copying public records. [Order 73-12, § 296-06-160, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-180 Department final opinions and orders not indexed. [Order 73-12, § 296-06-180, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-190 Instructions to staff in individual cases not indexed. [Order 73-12, § 296-06-190, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-200 Factual staff reports, etc., not indexed in individual cases. [Order 73-12, § 296-06-200, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-210 Correspondence and materials not indexed. [Order 73-12, § 296-06-210, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-220 Communications regarding public records. [Order 73-12, § 296-06-220, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-230 Adoption of form. [Order 73-12, § 296-06-230, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

296-06-240 Maintenance of index. [Order 73-11, § 296-06-240, filed 7/31/73.] Repealed by Order 76-27, filed 9/28/76.

WAC 296-06-010 Purpose. The department of labor and industries is a department of state government created by RCW 43.17.010. It shall hereafter in this chapter be referred to as the "department." Where appropriate, department also refers to its staff and employees. The department promulgates this chapter to ensure compliance with the provisions of chapter 42.17 RCW, and in particular with sections of that act dealing with public records.

[Order 76-27, § 296-06-010, filed 9/28/76; Order 73-12, § 296-06-010, filed 7/31/73.]

WAC 296-06-020 Description of organization of the department. (1) **Central organization.** The chief executive officer of the department is the director of labor and industries, hereinafter called "director." He is appointed by the governor with the consent of the senate to hold office at the pleasure of the governor. The department is organized in five divisions: Industrial insurance, industrial safety and health, industrial relations, apprenticeship, and building and construction safety inspection services. Each division is headed by an assistant director appointed by the director, but in the case of the division of apprenticeship, the director's selection must be confirmed by the Washington state apprenticeship council, whose members are also appointed by the director. The department also has a section to administer the Crime Victims Act, chapter 7.68 RCW. This section is also headed by an assistant director appointed by the director. Major policy decisions, rule-making, and the primary administrative functions of the department are carried out by the department's central organizations in Olympia. The director also serves as chairman of the five-member state board of pilotage commissioners but that board is not a part of the department.

(2) **Field organization.**

(a) The department maintains service locations or major field offices in fifteen cities. Each of these offices is headed by a district manager.

(b) The department-owned rehabilitation center in Seattle is headed by a superintendent.

[Order 76-27, § 296-06-020, filed 9/28/76; Order 73-12, § 296-06-020, filed 7/31/73.]

WAC 296-06-030 Location of established places where information about the department may be obtained and department's public records inspected and copied. (1) **Olympia office.**

(a) The office of the director, the administrative office of the department, the main offices of the division of industrial insurance, the office of the public records officer are in the General Administration Building, Olympia, Washington. The main offices of the other divisions are located at the following places: Industrial Safety and Health at 308-318 East Fourth Avenue, Olympia, Washington; Apprenticeship at 318 East Fourth Avenue,

Olympia, Washington; Building and Construction Safety Inspection Services at 319 East Fourth Avenue, Olympia, Washington; and Industrial Relations and Crime Victims Compensation at 208 Eleventh Avenue, Olympia, Washington. General information about the department and its divisions may be obtained at these places.

(2) **Field offices.**

(a) General information about the department may also be obtained at its service locations or major field offices at the following places:

Aberdeen, P.O. Box 66,
2700 Simpson Avenue, 98520
Bellingham, P.O. Box 608,
2500 Elm Street, Suite F, 98225
Bremerton, P.O. Box 307,
245 Fourth Street Building, Suite 501, 98310
Ephrata, P.O. Box 906,
21 "C" Street, Southwest, 98823
Everett, P.O. Box 67,
Eastmont Plaza, 98206
Kennewick, P.O. Box 6126,
130 Vista Way, 99336
Longview, P.O. Box 578,
1342 12th Avenue, 98632
Mount Vernon, P.O. Box 189,
2021 College Way, 98273
Port Angeles, 405 East 8th, 98362
Seattle, 300 West Harrison, 98119
Spokane, 1322 North Post Street, 99201
Tacoma, 122 Public Service Building,
1305 Tacoma Avenue South, 98402
Vancouver, P.O. Box 331,
601 West Evergreen Boulevard, 98660
Walla Walla, 1750 Portland Avenue,
Eastgate Professional Building, 99362
Wenatchee, P.O. Box 597,
1139 Princeton, 98801
Yakima, P.O. Box 527,
1011 South Third Street, 98907

(b) Information about the extended care services offered injured workers including physical therapy, special instruction, or vocational counseling may be obtained from the department's Rehabilitation Center at 4730 32nd Avenue South and Alaska Street, P.O. Box 18289, Columbia Station, Seattle, Washington 98118.

[Order 76-27, § 296-06-030, filed 9/28/76; Order 73-12, § 296-06-030, filed 7/31/73.]

WAC 296-06-040 Operations and procedures. The general course and method of channeling and determining the operations of the five divisions of the department and the nature of requirements of all formal and informal procedures connected therewith are summarized in the following subsections:

(1) **Industrial insurance.** This division administers medical care and payment of disability compensation for workers (or their dependents or survivors) sustaining job injuries or occupational diseases. Virtually all employers in the state must provide this industrial insurance coverage. The medical program of the state fund is funded through payments by employers and employees. The disability payments by the state fund are funded by premiums collected from employers. Descriptions of procedures to be followed by employers and employees are outlined in department publications entitled *A Guide for Employers* and *Guide to Workers' Compensation Benefits.*

This division also certifies certain employers to become "self-insured," which means that they are permitted to pay the legally defined industrial insurance benefits from their own funds. After this division certifies an employer as a self-insurer, it monitors all claims for injury benefits to make certain employees receive all rightful benefits.

(2) **Industrial safety and health.** This division endeavors to prevent job injuries and illnesses by adopting and enforcing safety and health standards and by training employers and employees in safe working procedures. It administers the Washington Industrial Safety and Health Act (WISHA), operating under a state plan agreement with the federal Occupational Safety and Health Administration (OSHA). Employer and employee procedures are outlined in the department's publication, *A Guide to WISHA.*

(3) **Industrial relations.** This division administers the laws regulating wages, hours, and working conditions. The division enforces the minimum wage law and may assist in the collection of claims for unpaid wages. The industrial statistician determines the "prevailing rate of wage" on public works contracts and gathers information on wages and conditions of labor in the state, the consumer price index, standard family budgets, and manpower data on the labor force, employment, unemployment, and earnings. The section headed by the supervisor of employment standards administers the state employment standard designed to protect the health, safety, and welfare of virtually all nonagricultural employees. This section also issues minor work permits designed to protect young workers from exploitation and hazardous environments. Industrial relations agents investigate complaints of violations of employment standards, the minimum wage law and other wage laws; hold conferences between employees and employers; inspect records; make investigations to determine whether or not there have been violations of statutes, rules, or regulations; and suggest remedial actions.

(4) **Apprenticeship.** This division, with the Washington state apprenticeship and training council, administers the apprenticeship training law for those persons desiring to become skilled in any one of various trades, crafts, and services. Local joint apprenticeship committees throughout the state are responsible for the actual training. This division acts as a liaison between theses committees and the council to make certain that the policies of the council are followed uniformly. The division also administers on-the-job training programs for those persons training in occupations other than apprenticeable occupations.

(5) **Building and construction safety inspection services.** This division administers programs designed to protect the life, health, and property of the general public. The various sections of this division issue licenses; promulgate rules and regulations; certify standards; and ensure compliance. The division conducts electrical inspections; registers electrical contractors; inspects and regulates the use of boilers and pressure vessels; inspects elevators; ensures compliance with the standards for the manufacture, lease, and sale of mobile homes and recreational vehicles; enforces the statutes, rules, and regulations governing factory-built structures; licenses plumbers and electricians; and tests and registers general and specialty contractors.

(6) **Crime victims compensation.** This section pays medical and disability benefits to innocent victims of criminal acts (or to their dependents or survivors) who sustain injuries as a result thereof. Funds for this program are appropriated by the legislature from the state general fund. Benefit payments and procedures are outlined in the department's publication *When Crime Strikes.*

(7) **State board of pilotage commissioners.** This board is not a part of the department but is included here because by statute the director of the department of labor and industries is its chairman and because RCW 88.16-.020 names the department of labor and industries as its office and record-keeper. Other members include: Two pilots' representatives and two shipping company representatives. This board regulates pilotage services for ships moving in Puget Sound and adjacent inland waters, Grays Harbor and Willapa Bay. To carry out its responsibilities, the board establishes qualifications for, examines, and licenses pilots. It also fixes pilotage rates and enforces provisions of the law relating to safe pilotage.

[Order 76-27, § 296-06-040, filed 9/28/76; Order 73-12, § 296-06-040, filed 7/31/73.]

WAC 296-06-050 Rules of procedure, substantive rules, general policy statements, and interpretations of general applicability. The department's rules of procedures, substantive rules of general applicability, and statements of general policy and interpretations of general applicability adopted as authorized by law are contained in Title 296 WAC.

[Order 76-27, § 296-06-050, filed 9/28/76; Order 73-12, § 296-06-050, filed 7/31/73.]

WAC 296-06-080 Authorization for release of information. Any person having a right of privacy in any records of the department may authorize the inspection and copying of any such records by persons not otherwise so authorized by providing the department with a signed and dated written authorization describing the records covered by the authorization, and naming the person or persons authorized to inspect and copy. No such authorization shall be valid until submitted to the department.

[Order 76-27, § 296-06-080, filed 9/28/76; Order 73-12, § 296-06-080, filed 7/31/73.]

WAC 296-06-090 Public records officer. The department's public records officer shall have charge of its public records. He shall have his office in the administrative office of the department at Olympia, Washington. He shall be responsible for the enforcement of the department's rules and regulations regarding the release of public records, and shall ensure compliance and cooperation of the department's staff with the public records disclosure requirements of chapter 42.17 RCW. He may choose such designees as may be necessary.

[Order 76-27, § 296-06-090, filed 9/28/76; Order 73-12, § 296-06-090, filed 7/31/73.]

WAC 296-06-100 Office hours. The customary office hours of the department for the purpose of inspection and copying of any of the department's public records as provided by this chapter shall be from 8:00 a.m. to noon and from 1:00 p.m. to 5:00 p.m., Monday through Friday, excluding legal holidays.

[Order 76-27, § 296-06-100, filed 9/28/76; Order 73-12, § 296-06-100, filed 7/31/73.]

WAC 296-06-110 Requests for public records. Persons requesting opportunity to copy or inspect the department's public records shall follow these procedures:

(1) Informal requests may be made orally or in written form to any of the department's service locations or its office in Olympia.

(2) The department may require a person who has made an informal request to submit a formal request.

(3) All formal requests shall be in writing on the form entitled: "Request for public record." Copies of said form shall be maintained in the department's offices in Olympia and at each service location.

(4) All formal requests shall be submitted by mail or personally to the assistant director who heads the division or the section from which records are being requested.

(5) Each formal request shall include the following information:

(a) The name of the person or persons making the request;

(b) The time of day and calendar date on which the request is made;

(c) The nature of the request, including description of the requested records by title, subject matter, date, and other means of enabling the staff of the department to identify the requested records and make them available.

(6) The staff of the department shall assist any person making a request, whether formal or informal, in identifying the requested record or records but in the event the records cannot be identified, the department shall so advise the person making the request, and, in the case of formal requests, return the formal request for resubmission with additional description of the requested records.

(7) When any request is made to inspect and copy material in files and records where a right of privacy is involved, or when such files and records are exempt by any other provision of law, inspection and copying shall not be permitted until the authorization described in WAC 296-06-080, together with a formal request, is

presented to the assistant director for the division involved. The assistant director shall make a record of all such authorizations. The authorization shall be immediately attached to such files and records and shall become a part thereof.

[Order 76-27, § 296-06-110, filed 9/28/76; Order 73-12, § 296-06-110, filed 7/31/73.]

WAC 296-06-120 Copying and fees. Where copies of public records are requested, the department may charge a fee of ten cents for each letter-size or legal-size copy for reimbursement of its actual costs incident to such copying. For each paper copy of a microfilmed record, the department may charge 20 cents per copy. These copying fees do not apply to the contractor registration section of the department. The fees that section charges for copies are set out in WAC 296-200-900. Whenever copies of public records are mailed to the person making the request, the department may require reimbursement for postage costs. All copies made at the request of persons desiring copies on copy equipment of the department will be made by department staff at times when the making of such copies will not unreasonably disrupt the operations of the department. If the records to be copied contain information that would violate any right of personal privacy, the department staff member shall prevent such information from appearing on any copy. Where the use of such equipment does not harm the public records or impede the normal work of the department, those requesting copies of public records may use their own copying equipment and paper without charge[,][.] but in such event the department staff will supervise the copying at all times.

[Statutory Authority: RCW 18.27.040, 42.17.290 and 42.17.300. 82-18-026 (Order 82-26), § 296-06-120, filed 8/25/82; Order 76-27, § 296-06-120, filed 9/28/76; Order 73-12, § 296-06-120, filed 7/31/73.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-06-130 Denials of requests for public records. Only the public records officer shall have the power to make a denial of a request for public records. Action on all such requests shall be prompt. In cases of informal requests, any member of the department's staff to whom an informal request is made may require the person making the request to submit a formal request or such staff member may bring the matter to the attention of the assistant director or his designee of the division from which records are being requested.

A decision on a formal request may be deferred for a reasonable time but immediate written notice of such deferral shall be given. All denials of requests for public records shall be in written form. All denials shall include a statement specifying the reason for the denial, a statement of any exemption authorizing withholding the record and a brief explanation of how the exemption applies to the record withheld, and shall be signed by the public records officer or his designee.

[Order 76-27, § 296-06-130, filed 9/28/76; Order 73-12, § 296-06-130, filed 7/31/73.]

WAC 296-06-140 Review of denials of requests for inspection or copying of public records. After any request for inspection or copying is denied, any person may petition the department to review its denial. Any such petition for review must be made in writing to the public records officer prior to the end of the second business day following the denial. Such petition shall specifically refer to the denial and shall contain a brief statement or any reasons for reconsideration of the denial. Any such petition shall be immediately referred to the director or such persons as he may designate to review such petitions. The person reviewing such petitions shall promptly review and reconsider the matter and either affirm or reverse the denial and communicate the decision promptly to the person submitting the petition.

[Order 76-27, § 296-06-140, filed 9/28/76; Order 73-12, § 296-06-140, filed 7/31/73.]

WAC 296-06-150 Protection of public records. The department shall protect public records from damage or disorganization and prevent excessive interference with other essential functions of the department. All inspections of public records shall be supervised by a department staff member. Any staff member supervising public records inspection may decline to act upon the requests of person who are intoxicated, violent, abusive, threatening, or disruptive, and may terminate the inspection or copying of public records by such persons. Any staff member supervising public records inspection will at all times insure that those inspecting the department's public records do not tear, mutilate, mark, or otherwise harm such records and shall terminate the inspection or copying of public records by any person who has harmed such records. The staff member may limit inspection and copying to any extent necessary to prevent such activity from unreasonably disrupting the department's operations. Any staff member supervising public records inspection shall at all times provide full, prompt, courteous assistance to persons requesting the inspection and copying of the department's public records.

[Order 76-27, § 296-06-150, filed 9/28/76; Order 73-12, § 296-06-150, filed 7/31/73.]

WAC 296-06-170 Records index. The department of labor and industries will not maintain a current index as provided for in RCW 42.17.260(2). As provided in RCW 42.17.260(3), this formal order is issued and published specifying the reasons why and the extent to which maintenance of such a current index would unduly burden or interfere with the operations of the department.

(1) It would both unduly burden and interfere with department operations to maintain a current index with the items specified in RCW 42.17.260 (2)(a), "final opinions, including concurring and dissenting opinions, as well as orders, made in the adjudication of cases," as the department through its several divisions, sections, and other subdivisions routinely and regularly issues a

great number of determinative orders. The division of industrial insurance alone is estimated to issue daily an average of about 1,200 to 2,000 or more determinative orders. It is estimated that the division of industrial safety and health averages over 60 orders daily. While other divisions, sections, and subdivisions have a lesser volume of orders, it would be unduly burdensome for the department to index all of the materials which would come within the scope of RCW 42.17.260 (2)(a). To index all such orders would either require more personnel and consequent expense or reduce the level of handling the essential functions and result in constantly greater periods of delay. Furthermore, all indexes maintained for departmental use by the various divisions, sections, and subdivisions of the department for internal use will remain available for public inspection and copying where permitted by law.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(2) It would both unduly burden and interfere with the department's operations to maintain a current index with all "instructions to staff that affect a member of the public" within the scope of RCW 42.17.260 (2)(c). The inclusion of every such instruction to the staff would require either more personnel to index such instructions or a reduction in the department's capacity to carry out its other functions. The department will, however, as it has in the past, continue to make available to the public for inspection or copying all instructions of a general nature to its staff that affects members of the public.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(3) It would both unduly burden and interfere with department operations to maintain a current index of all "factual staff reports and studies, scientific reports and studies, and any other factual information derived from tests, studies, reports, or surveys, whether conducted by public employees or others" within the scope of RCW 42.17.260 (2)(3). Further, many of the items covered by that description may be protected by rights of privacy, involve specific intelligence information and specific investigative files compiled by the department in its investigative capacities, involve the rights of privacy of a taxpayer, reveal the identity of persons who file complaints with the department in its investigative capacities, reveal valuable formulae, designs, drawings, or research data, disclosure of which would produce private gain and public loss, or involve records relevant to a controversy to which the department is a party but which records would not be available to another party under the rules of pretrial discovery for causes pending in the superior court. The department regularly and routinely has physical examinations conducted of injured workers and maintains the reports of such examinations in its confidential claim files. The indexing of such reports would be highly burdensome. Such reports are available to persons authorized to inspect them by the injured workers, to the employer, and to public officers in the course of their duties. To make such information available to the public at large would, quite apart from any question of violations of rights of privacy, subject the department to great inconvenience. For the foregoing reasons the department will continue to make available for inspection and copying only the material described in RCW 42.17.260 (2)(3) which is of a general nature and does not involve any rights of privacy or the other points mentioned above.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(4) It would both unduly burden and interfere with department operations to maintain a current index of the materials within the scope of RCW 42.17.260 (2)(f), that is, all "correspondence, and materials, referred to therein, by and with the agency relating to any regulatory, supervisory or enforcement responsibilities of the agency, whereby the agency determines, or opines upon, or is asked to determine or opine upon, the rights of the state, the public, a subdivision of state government, or of any private party." The department daily, routinely, and regularly receives and sends a vast amount of material fitting this description. It would require either a greatly increased staff to index everything of that nature or a drastic reduction of the department's ability to carry out its other essential functions. Also, much of the material is incorporated in confidential claim files or is otherwise subject to rights of privacy or is exempt from public inspection and copying by the provisions of RCW 42.17-.310. Materials relating to the claims of injured workers are available to the employer, to public employees in the performance of their official duties and persons authorized by the injured worker. The various divisions, sections, and parts of the department maintain internal indexes which are available for public inspection.

Accordingly, and for the above reasons, it is ordered that the public records officer not establish an index relative to such subject matter.

(5) The department did maintain a current index of the matters not covered by subsections (1) through (4) for nearly three years following the promulgation of its initial set of public records rules which was filed with the office of the code reviser on July 31, 1973. That index was virtually never asked for, nor was it used to any extent at all by the public. The department devoted many manhours that could have been put to accomplishment of its statutory duties to prepare and maintain that current index. The department finds it has been unduly burdensome to make the extensive effort necessary to maintain such a current index in the face of almost complete public apathy. Therefore, pursuant to RCW 42.17.260(3), the department issues and publishes this formal order specifying the reasons why and the extent to which compliance with any of the provisions of RCW 42.17.260(2) requiring the maintenance of a current index would unduly burden or interfere with its operations. The department herewith states that it will not hereafter maintain such a current index. The department further states that it will, however, make available for public inspection and copying all indexes and lists, not otherwise exempt, maintained for normal agency use. Guidance to

public records available through the department will be provided by the public records officer upon request.

[Order 76-27, § 296-06-170, filed 9/28/76; Order 73-12, § 296-06-170, filed 7/31/73.]

WAC 296-06-990 Appendix A--Form--Department of labor and industries authorization to inspect or copy public records in which an individual has a right of privacy.

APPENDIX A

DEPARTMENT OF LABOR AND INDUSTRIES
AUTHORIZATION TO INSPECT OR COPY PUBLIC RECORDS IN WHICH AN INDIVIDUAL HAS A RIGHT OF PRIVACY

I, _____ residing at _____, hereby authorize _____ to inspect and/or copy any records of the department of labor and industries relating to me, the disclosure of which records without my permission would violate my rights of privacy.

Dated this _____ day of _____, 197__.

_____
Signature

[Order 73-12, Appendix A (codified as WAC 296-06-990), filed 7/31/73.]

WAC 296-06-99001 Appendix B--Form--Request for public records under the provisions of chapter 1, Laws of 1973 (Initiative 276).

DEPARTMENT OF LABOR AND INDUSTRIES

APPENDIX B

Request for Public Records under the Provisions of chapter 1, Laws of 1973 (Initiative 276)

Name: _____

Date: _____

Time: _____

Please state the nature of your request:

_____

_____

Please identify the public records you wish to inspect by reference to the department's current index or if the records are not so indexed, please describe the records to enable the public records officer or designee to find them. Also please indicate whether you wish to have copies made.

_____

_____

_____

_____

FOR DEPARTMENT USE ONLY:

Action taken on request: _____

_____

Name of person taking the action: _____

Date action taken: _____

[Order 73-12, Appendix B (codified as WAC 296-06-99001), filed 7/31/73.]

Chapter 296-07 WAC
STATE ENVIRONMENTAL POLICY ACT GUIDELINES

WAC

296-07-010 Use of abbreviations.
296-07-020 Purpose and scope.
296-07-030 Meaning of words and terms.
296-07-040 Exemptions.
296-07-050 Sufficiency of compliance with SEPA guidelines.
296-07-060 Designation of responsible official.
296-07-070 Department's SEPA public information center.
296-07-080 Maintenance of EIS available register.
296-07-090 Exemption for emergency actions.
296-07-100 Chapter to be amended when SEPA guidelines amended.
296-07-110 Consideration of economic values.

WAC 296-07-010 Use of abbreviations. In this chapter the department of labor and industries shall be referred to as the "department"; the director of labor and industries as the "director"; the State Environmental Policy Act, chapter 43.21C RCW, as "SEPA"; chapter 197-10 WAC effective January 16, 1976 as the "SEPA guidelines"; and environmental impact statement as "EIS."

[Order 76-16, § 296-07-010, filed 5/20/76.]

WAC 296-07-020 Purpose and scope. The rules contained in this chapter are to carry out the policy and procedures of SEPA and the SEPA guidelines, and shall govern the application of SEPA requirements to the department. These rules are adopted pursuant to the requirement of and authority provided by chapter 43.21C RCW and chapter 197-10 WAC.

From the effective date of this chapter the department in undertaking nonexempt actions shall conform to those relevant and applicable policies and procedures declared mandatory by the provisions of SEPA or the SEPA guidelines. Such pertinent and mandatory policy and procedures are hereby incorporated by reference and adopted as the policy and procedures of the department.

[Order 76-16, § 296-07-020, filed 5/20/76.]

WAC 296-07-030 Meaning of words and terms. The words and terms in this chapter and in all proceedings of the department in compliance with SEPA shall be deemed to conform to the mandatory definitions contained in the SEPA guidelines.

[Order 76-16, § 296-07-030, filed 5/20/76.]

WAC 296-07-040 Exemptions. All activities under programs administered by the department as of December 12, 1975 are hereby exempted, except the issuance of any license for the manufacture of explosives or the adoption or amendment by the department of any regulations incorporating general standards respecting the issuance of licenses authorizing the storage of explosives pursuant to chapter 70.74 RCW.

The adoption of any industrial health or safety regulations containing noise standards shall be considered a major action under this chapter. In addition all other exemptions provided by SEPA or the SEPA guidelines shall apply.

[Order 76-16, § 296-07-040, filed 5/20/76.]

WAC 296-07-050 Sufficiency of compliance with SEPA guidelines. Compliance with the applicable mandatory SEPA guidelines as supplemented by this chapter shall be deemed to constitute compliance with this chapter.

[Order 76-16, § 296-07-050, filed 5/20/76.]

WAC 296-07-060 Designation of responsible official. The assistant director of any department, division, or head of any independent department section with major responsibility for any non-exempt action shall be the responsible official for the purpose of complying with SEPA. In any other case the director shall be the responsible official or he shall designate another person to be the responsible official.

[Order 76-16, § 296-07-060, filed 5/20/76.]

WAC 296-07-070 Department's SEPA public information center. There is hereby established a department public information center to carry out the functions contemplated by the SEPA guidelines, WAC 197-10-830, to be located in the offices of the department at Olympia, Washington. The department's public records officer shall have charge thereof.

[Order 76-16, § 296-07-070, filed 5/20/76.]

WAC 296-07-080 Maintenance of EIS available register. The department shall maintain an EIS available register at its SEPA public information center. Said register shall be in the charge of the department's public records officer and it shall be available for public inspection and copying.

[Order 76-16, § 296-07-080, filed 5/20/76.]

WAC 296-07-090 Exemption for emergency actions. When actions are exempted from the requirements of SEPA or the SEPA guidelines because they are actions which must be taken immediately, or within a time too short to allow full compliance with SEPA or the SEPA guidelines to avoid an imminent danger to public or private property, or to prevent an imminent threat of serious environmental degradation, the responsible official shall prepare a written statement showing the nature of the action and the reasons for immediate action. Such statement shall be filed in the department's SEPA public information center.

[Order 76-16, § 296-07-090, filed 5/20/76.]

WAC 296-07-100 Chapter to be amended when SEPA guidelines amended. When amendments are adopted to the SEPA guidelines the department shall adopt all amendments to this chapter within one hundred twenty days to bring this chapter into conformance with the SEPA guidelines as amended.

[Order 76-16, § 296-07-100, filed 5/20/76.]

WAC 296-07-110 Consideration of economic values. In promulgating rules in compliance with the SEPA guidelines and any environmental, social, health, safety, or other standards connected therewith, the department shall, pursuant to chapter 117, Laws of 1975-'76 2nd ex. sess., give appropriate consideration to economic values along with such other considerations.

[Order 76-16, § 296-07-110, filed 5/20/76.]

Chapter 296-08 WAC
PRACTICE AND PROCEDURE

WAC

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296-08-470 Expert or opinion testimony and testimony based on economic and statistical data—Number and qualifications of witnesses.
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296-08-510 Continuances.
296-08-520 Rules of evidence—Admissibility criteria.
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296-08-540 Petitions for rule making, amendment or repeal.
296-08-550 Petitions for rule making, amendment or repeal—Requisites.
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296-08-570 Petitions for rule making, amendment or repeal—Notice of disposition.
296-08-580 Declaratory rulings.
296-08-590 Forms.

WAC 296-08-001 Effective date and validity. These rules of practice and procedure have been adopted by the department of labor and industries in accordance with the authority vested in it by law and pursuant to a hearing held at Olympia, Washington, on March 10, 1960. The effective date of these rules is March 18th, 1960.

[Rule .08.591, effective 3/18/60, filed 3/23/60.]

WAC 296-08-010 Appearance and practice before agency--Who may appear. No person may appear in a representative capacity before the department or any division, board, commission or council thereof or its designated hearing officer other than the following: (1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the department or the division, board, commission or council thereof and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/18/60, filed 3/23/60.]

WAC 296-08-020 Appearance and practice before agency--Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the department or any division, board, commission or council thereof or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the department or the division, board, commission or council thereof or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/18/60, filed 3/23/60.]

WAC 296-08-030 Appearance and practice before agency--Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the department or any division, board, commission or council thereof to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/18/60, filed 3/23/60.]

WAC 296-08-040 Appearance and practice before agency--Standards of ethical conduct. All persons appearing in proceedings before the department of any division, board, commission or council thereof in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the department or the division, board, commission or council thereof may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/18/60, filed 3/23/60.]

WAC 296-08-050 Appearance and practice before agency--Appearance by former employee of agency or former member of attorney general's staff. No former employee of the department or any division, board, commission or council thereof or member of the attorney general's staff may at any time after severing his employment with the department or the division, board, commission or council thereof or the attorney general appear, except with the written permission and in compliance with RCW 42.22.040, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the department or any division, board, commission or council thereof.

[Rule .08.050, effective 3/18/60, filed 3/23/60.]

WAC 296-08-060 Appearance and practice before agency--Former employee as expert witness. No former employee of the department or any division, board, commission or council thereof shall at any time after severing his employment with the department or the division, board, commission or council thereof appear, except with the written permission and in compliance with RCW 42.22.040, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the department or any division, board, commission or council thereof.

[Rule .08.060, effective 3/18/60, filed 3/23/60.]

WAC 296-08-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the department or any division, board, commission or council thereof or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/18/60, filed 3/23/60.]

WAC 296-08-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice in writing. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090 (2)(i).

[Rule .08.080, effective 3/18/60, filed 3/23/60.]

WAC 296-08-090 Service of process--By whom served. The department or any division, board, commission or council thereof shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/18/60, filed 3/23/60.]

WAC 296-08-100 Service of process--Upon whom served. All papers served by either the department or any division, board, commission or council thereof or any party shall be served upon all counsel of record at the time such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/18/60, filed 3/23/60.]

WAC 296-08-110 Service of process--Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/18/60, filed 3/23/60.]

WAC 296-08-120 Service of process--Methods of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/18/60, filed 3/23/60.]

WAC 296-08-130 Service of process--When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/18/60, filed 3/23/60.]

WAC 296-08-140 Service of process--Filing with agency. Papers required to be filed with the department or any division, board, commission or council thereof shall be deemed filed upon actual receipt by the department or the division, board, commission or council thereof at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/18/60, filed 3/23/60.]

WAC 296-08-150 Subpoenas--Where provided by law--Form. Every subpoena, where authorized by law, shall state "department of labor and industries, state of Washington (name of appropriate division, board, etc.)" and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/18/60, filed 3/23/60.]

WAC 296-08-160 Subpoenas--Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. Where authorized by law, the department, or any division, board, commission or council thereof may issue subpoenas to parties not so represented upon request or upon a showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/18/60, filed 3/23/60.]

WAC 296-08-170 Subpoenas--Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/18/60, filed 3/23/60.]

WAC 296-08-180 Subpoenas--Fees. Witnesses summoned before the department or any division, board, commission or council thereof shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/18/60, filed 3/23/60.]

WAC 296-08-190 Subpoenas--Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return,

affidavit or acknowledgment of service with the department or the division, board, commission or council thereof or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the department or the division, board, commission or council thereof and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/18/60, filed 3/23/60.]

WAC 296-08-200 Subpoenas--Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the department or the division, board, commission or council thereof or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/18/60, filed 3/23/60.]

WAC 296-08-210 Subpoenas--Enforcement. Upon application and for good cause shown, the department or any division, board, commission or council thereof will seek judicial enforcement of subpoenas, where authorized by law, issued to parties and which have not been quashed.

[Rule .08.210, effective 3/18/60, filed 3/23/60.]

WAC 296-08-220 Subpoenas--Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/18/60, filed 3/23/60.]

WAC 296-08-370 Official notice--Matters of law. The department or any division, board, commission or council thereof or its hearing officer upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the federal register.

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations.

(4) **Agency organization.** The department's or any division's, board's, commission's or council's thereof organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/18/60, filed 3/23/60.]

WAC 296-08-380 Official notice--Material facts. In the absence of controverting evidence, the department or any division, board, commission or council thereof and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the department or the division, board, commission or council thereof;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the department or the division, board, commission or council thereof as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the department or the division, board, commission or council thereof may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the department or the division, board, commission or council thereof rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the department or the division, board, commission or council thereof may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert,

any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the department or the division, board, commission or council thereof or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/18/60, filed 3/23/60.]

WAC 296-08-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the department or the division, board, commission or council thereof with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/18/60, filed 3/23/60.]

WAC 296-08-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the department or the division, board, commission or council thereof that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/18/60, filed 3/23/60.]

WAC 296-08-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall:

(1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/18/60, filed 3/23/60.]

WAC 296-08-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/18/60, filed 3/23/60.]

WAC 296-08-430 Prehearing conference rule--Authorized. In any proceeding the department or any division, board, commission or council thereof or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider:

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/18/60, filed 3/23/60.]

WAC 296-08-440 Prehearing conference rule--Record of conference action. The department of the division, board, commission or council thereof or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/18/60, filed 3/23/60.]

WAC 296-08-450 Submission of documentary evidence in advance. Where practical the department or the division, board, commission or council thereof or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/18/60, filed 3/23/60.]

WAC 296-08-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/18/60, filed 3/23/60.]

WAC 296-08-470 Expert or opinion testimony and testimony based on economic and statistical data--Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/18/60, filed 3/23/60.]

WAC 296-08-480 Expert or opinion testimony and testimony based on economic and statistical data--Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/18/60, filed 3/23/60.]

WAC 296-08-490 Expert or opinion testimony and testimony based on economic and statistical data--Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-08-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/18/60, filed 3/23/60.]

WAC 296-08-500 Expert or opinion testimony and testimony based on economic and statistical data--Effect of noncompliance with WAC 296-08-470 or 296-08-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-08-470 or 296-08-480, such

testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/18/60, filed 3/23/60.]

WAC 296-08-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as requiring such continuance come to his knowledge, notify the department or the division, board, commission or council thereof or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The department or the division, board, commission or council thereof or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the department or the division, board, commission or council thereof or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/18/60, filed 3/23/60.]

WAC 296-08-520 Rules of evidence--Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/18/60, filed 3/23/60.]

WAC 296-08-530 Rules of evidence--Tentative admission--Exclusion--Discontinuance--Objections. When objection is made to the admissibility of evidence such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/18/60, filed 3/23/60.]

WAC 296-08-540 Petitions for rule making, amendment or repeal. Any interested person may petition the department or any division, board, commission or council thereof requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/18/60, filed 3/23/60.]

WAC 296-08-550 Petitions for rule making, amendment or repeal--Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/18/60, filed 3/23/60.]

WAC 296-08-560 Petitions for rule making, amendment or repeal--Agency must consider. All petitions shall be considered by the department or the division, board, commission or council thereof and the department or the division, board, commission or council thereof may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/18/60, filed 3/23/60.]

WAC 296-08-570 Petitions for rule making, amendment or repeal--Notice of disposition. The department or the division, board, commission or council thereof shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/18/60, filed 3/23/60.]

WAC 296-08-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the department or any division, board, commission or council thereof for a declaratory ruling. The department or the division, board, commission or council thereof shall consider the petition and within a reasonable time shall:

(1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued; or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

If a hearing is held or evidence is submitted as provided in subsection (3), the department or the division, board, commission or council thereof shall within a reasonable time:

(1) Issue a binding declaratory rule; or

(2) Issue a nonbinding declaratory ruling; or

(3) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/18/60, filed 3/23/60.]

WAC 296-08-590 Forms. (1) Any interested person petitioning the department or the division, board, commission or council thereof for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "before the department of labor and industries (name of appropriate division board, etc.)." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

(c) The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8-1/2" x 11" or 8-1/2" x 13" in size.

(2) Any interested person petitioning the department or any division, board, commission or council thereof requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose:

(a) At the top of the page shall appear the wording, "before the department of labor and industries (name of appropriate division, board, etc.)." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules.") Opposite the foregoing shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall be set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

(c) Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8-1/2" x 11" or 8-1/2" x 13" in size.

[Rule .08.590, effective 3/18/60, filed 3/23/60.]

Chapter 296-09 WAC
PRACTICE AND PROCEDURE--BOARD OF BOILER RULES

WAC

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WAC 296-09-010 Appearance and practice before agency--Who may appear. No person may appear in a

representative capacity before the board of boiler rules or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the board of boiler rules and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full–time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/10/60, filed 3/23/60.]

WAC 296-09-020 Appearance and practice before agency--Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the board of boiler rules or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the board or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/10/60, filed 3/23/60.]

WAC 296-09-030 Appearance and practice before agency--Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the board of boiler rules to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/10/60, filed 3/23/60.]

WAC 296-09-040 Appearance and practice before agency--Standards of ethical conduct. All persons appearing in proceedings before the board of boiler rules in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the board may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/10/60, filed 3/23/60.]

WAC 296-09-050 Appearance and practice before agency--Appearance of former employee of board or former member of attorney general's staff. No former employee of the board of boiler rules or member of the attorney general's staff may at any time after severing his employment with the board or the attorney general appear, except with the written permission and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the board.

[Rule .08.050, effective 3/10/60, filed 3/23/60.]

WAC 296-09-060 Appearance and practice before agency--Former employee as expert witness. No former employee of the board of boiler rules shall at any time after severing his employment with the board appear, except with the written permission and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the board.

[Rule .08.060, effective 3/10/60, filed 3/23/60.]

WAC 296-09-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the board of boiler rules or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/10/60, filed 3/23/60.]

WAC 296-09-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice, and such waiver be noted in the minutes. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090(1).

[Rule .08.080, effective 3/10/60, filed 3/23/60.]

WAC 296-09-090 Service of process--By whom served. The board of boiler rules shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/10/60, filed 3/23/60.]

WAC 296-09-100 Service of process--Upon whom served. All papers served by either the board of boiler rules or any party shall be served upon all counsel of record at the time [of] such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify

all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/10/60, filed 3/23/60.]

WAC 296-09-110 Service of process--Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/10/60, filed 3/23/60.]

WAC 296-09-120 Service of process--Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/10/60, filed 3/23/60.]

WAC 296-09-130 Service of process--When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/10/60, filed 3/23/60.]

WAC 296-09-140 Service of process--Filing with agency. Papers required to be filed with the board of boiler rules shall be deemed filed upon actual receipt by the board at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/10/60, filed 3/23/60.]

WAC 296-09-370 Official notice--Matters of law. The board of boiler rules or its hearing officer upon request made before or during a hearing, will officially notice: (1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register.

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations.

(4) **Agency organization.** The board of boiler rules' organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/10/60, filed 3/23/60.]

WAC 296-09-380 Official notice--Material facts. In the absence of controverting evidence, the board of boiler rules and its hearing officers, upon request made before or during a hearing, may officially notice: (1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the board of boiler rules;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the board of boiler rules as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the board of boiler rules may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any pre-hearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the board of boiler rules rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the board may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the board of boiler rules or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/10/60, filed 3/23/60.]

WAC 296-09-390 Presumptions. Upon proof of the predicate facts specified in the following six subdivisions hereof without substantial dispute and by direct, clear, and convincing evidence, the board of boiler rules with or without prior request or notice, may take the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do,

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/10/60, filed 3/23/60.]

WAC 296-09-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided: (1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the board of boiler rules that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/10/60, filed 3/23/60.]

WAC 296-09-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall: (1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding.

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/10/60, filed 3/23/60.]

WAC 296-09-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/10/60, filed 3/23/60.]

WAC 296-09-430 Prehearing conference rule--Authorized. In any proceeding the board of boiler rules or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/10/63, filed 3/23/60.]

WAC 296-09-440 Prehearing conference rule--Record of conference action. The board of boiler rules or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/10/60, filed 3/23/60.]

WAC 296-09-450 Submission of documentary evidence in advance. Where practical the board of boiler rules or its designated hearing officer may require: (1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/10/60, filed 3/23/60.]

WAC 296-09-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/10/60, filed 3/23/60.]

WAC 296-09-470 Expert or opinion testimony and testimony based on economic or statistical data--Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him [and] to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/10/60, filed 3/23/60.]

WAC 296-09-480 Expert or opinion testimony and testimony based on economic or statistical data--Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/10/60, filed 3/23/60.]

WAC 296-09-490 Expert or opinion testimony and testimony based on economic or statistical data--Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-09-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/10/60, filed 3/23/60.]

WAC 296-09-500 Expert or opinion testimony and testimony based on economic or statistical data--Effect of noncompliance with WAC 296-09-470 or 296-09-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-09-470 or 296-09-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/10/60, filed 3/23/60.]

WAC 296-09-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as requiring such continuance come to his knowledge, notify the board of boiler rules or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The board or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the board or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer

conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/10/60, filed 3/23/60.]

WAC 296-09-520 Rules of evidence--Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/10/60, filed 3/23/60.]

WAC 296-09-530 Rules of evidence--Tentative admission--Exclusion--Discontinuance--Objections. When objection is made to the admissibility of evidence such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/10/60, filed 3/23/60.]

WAC 296-09-540 Petitions for rule making, amendment or repeal--Who may petition. Any interested person may petition the board of boiler rules requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/10/60, filed 3/23/60.]

WAC 296-09-550 Petitions for rule making, amendment or repeal--Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/10/60, filed 3/23/60.]

WAC 296-09-560 Petitions for rule making, amendment or repeal--Agency must consider. All petitions shall be considered by the board of boiler rules and the board may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/10/60, filed 3/23/60.]

WAC 296-09-570 Petitions for rule making, amendment or repeal--Notice of disposition. The board of boiler rules shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/10/60, filed 3/23/60.]

WAC 296-09-580 Declaratory rulings. (1) As prescribed by RCW 34.04.080, any interested person may petition the board of boiler rules for a declaratory ruling. The board shall consider the petition and within a reasonable time shall:

(a) Issue a nonbinding declaratory ruling; or

(b) Notify the person that no declaratory ruling is to be issued; or

(c) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(2) If a hearing is held or evidence is submitted as provided in subsection (c), the department or the board shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/10/60, filed 3/23/60.]

WAC 296-09-590 Forms. (1) Any interested person petitioning the board of boiler rules thereof for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording "Before the board of boiler rules." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

(2) Any interested person petitioning the board of boiler rules thereof requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording, "Before the board of boiler rules." On the left side of the page below the foregoing the following caption shall be

set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

[Rule .08.590, effective 3/10/60, filed 3/23/60.]

Chapter 296-10 WAC
PRACTICE AND PROCEDURE--INDUSTRIAL WELFARE COMMITTEE

WAC

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WAC 296-10-010 Appearance and practice before agency--Who may appear. No person may appear in a representative capacity before the industrial welfare committee or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the industrial welfare committee and have been duly authorized by the same to appear before it in a representative capacity.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/18/60, filed 3/23/60.]

WAC 296-10-020 Appearance and practice before agency--Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of

testimony and the formulation of a record subject to review by the courts, where the industrial welfare committee or its designated hearing officer determine that representative activity in such hearing requires a high degree of legal training, experience, and skill, the committee or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/18/60, filed 3/23/60.]

WAC 296-10-030 Appearance and practice before agency--Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the industrial welfare committee to solicit business by circulars, advertisements or by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/18/60, filed 3/23/60.]

WAC 296-10-040 Appearance and practice before agency--Standards of ethical conduct. All persons appearing in proceedings before the industrial welfare committee in representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, [the] committee may decline to permit such person to appear in a representative capacity in any proceeding before it.

[Rule .08.040, effective 3/18/60, filed 3/23/60.]

WAC 296-10-050 Appearance and practice before agency--Appearance of former employee of board or former member of attorney general's staff. No former employee of the industrial welfare committee or member of the attorney general's staff may at any time after severing his employment with the committee or the attorney general appear, except with the written permission and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the committee.

[Rule .08.050, effective 3/18/60, filed 3/23/60.]

WAC 296-10-060 Appearance and practice before agency--Former employee as expert witness. No former employee of the industrial welfare committee shall at any time after severing his employment with the committee appear, except with the written permission and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the committee.

[Rule .08.060, effective 3/18/60, filed 3/23/60.]

WAC 296-10-070 Computation of time. In computing any period of time prescribed or allowed by the rules or by the order of the industrial welfare committee or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/18/60, filed 3/23/60.]

WAC 296-10-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 10 days before the date set for the hearing, unless otherwise prescribed by law, or unless all interested parties waive such notice in writing. The notice shall state the time, place, and issues involved, as required by RCW 34.04.090(1).

[Rule .08.080, effective 3/18/60, filed 3/23/60.]

WAC 296-10-090 Notice and opportunity for hearing in contested cases--By whom served. The industrial welfare committee shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/18/60, filed 3/23/60.]

WAC 296-10-100 Notice and opportunity for hearing in contested cases--Upon whom served. All papers served by either the industrial welfare committee or any party shall be served upon all counsel of record at the time such filing and upon parties not represented by counsel or upon their agents designated by them by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/18/60, filed 3/23/60.]

WAC 296-10-110 Notice and opportunity for hearing in contested cases--Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/18/60, filed 3/23/60.]

WAC 296-10-120 Notice and opportunity for hearing in contested cases--Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, or registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/18/60, filed 3/23/60.]

WAC 296-10-130 Notice and opportunity for hearing in contested cases--When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped

and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/18/60, filed 3/23/60.]

WAC 296-10-140 Notice and opportunity for hearing in contested cases--Filing with agency. Papers required to be filed with the industrial welfare committee shall be deemed filed upon actual receipt by the committee at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/18/60, filed 3/23/60.]

WAC 296-10-150 Subpoenas--Where provided by law--Form. Every subpoena, where authorized by law, shall state "Industrial welfare committee, state of Washington" and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/18/60, filed 3/23/60.]

WAC 296-10-160 Subpoenas--Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. Where authorized by law, the industrial welfare committee may issue subpoenas to parties not so represented upon a request or showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/18/60, filed 3/23/60.]

WAC 296-10-170 Subpoenas--Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/18/60, filed 3/23/60.]

WAC 296-10-180 Subpoenas--Fees. Witnesses summoned before the industrial welfare committee shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/18/60, filed 3/23/60.]

WAC 296-10-190 Subpoenas--Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit or acknowledgment of service with the industrial welfare committee or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the committee and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/18/60, filed 3/23/60.]

WAC 296-10-200 Subpoenas--Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the industrial welfare committee or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/18/60, filed 3/23/60.]

WAC 296-10-210 Subpoenas--Enforcement. Upon application and for good cause shown, the industrial welfare committee will seek judicial enforcement of subpoenas, where authorized by law, issued to parties and which have not been quashed.

[Rule .08.210, effective 3/18/60, filed 3/23/60.]

WAC 296-10-220 Subpoenas--Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/18/60, filed 3/23/60.]

WAC 296-10-370 Official notice--Matters of law. The industrial welfare committee or its hearing officer upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records; journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser;

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations;

(4) **Agency organization.** The industrial welfare committee's organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/18/60, filed 3/23/60.]

WAC 296-10-380 Official notice--Material facts. In the absence of controverting evidence, the industrial welfare committee and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issue and position of the parties therein, and the disposition of

any proceeding then pending before or theretofore concluded by the industrial welfare committee;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the industrial welfare committee as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the industrial welfare committee may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the industrial welfare committee rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the committee may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the industrial welfare committee its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/18/60, filed 3/23/60.]

WAC 296-10-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the industrial welfare committee with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, provided to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/18/60, filed 3/23/60.]

WAC 296-10-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided:

(1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made, their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a prehearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission or record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the industrial welfare committee that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/18/60, filed 3/23/60.]

WAC 296-10-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall:

(1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/18/60, filed 3/23/60.]

WAC 296-10-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/18/60, filed 3/23/60.]

WAC 296-10-430 Prehearing conference rule--Authorized. In any proceeding the industrial welfare committee or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider

(1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/18/60, filed 3/23/60.]

WAC 296-10-440 Prehearing conference rule--Record of conference action. The industrial welfare committee or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/18/60, filed 3/23/60.]

WAC 296-10-450 Submission of documentary evidence in advance. Where practical the industrial welfare committee or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross-examination and rebuttal evidence.

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/18/60, filed 3/23/60.]

WAC 296-10-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/18/60, filed 3/23/60.]

WAC 296-10-470 Expert or opinion testimony and testimony based on economic or statistical data--Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot agree, require them to submit to him to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/18/60, filed 3/23/60.]

WAC 296-10-480 Expert or opinion testimony and testimony based on economic or statistical data--Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so

permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/18/60, filed 3/23/60.]

WAC 296-10-490 Expert or opinion testimony and testimony based on economic or statistical data--Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-10-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/18/60, filed 3/23/60.]

WAC 296-10-500 Expert or opinion testimony and testimony based on economic or statistical data--Effect of noncompliance with WAC 296-10-470 or 296-10-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-10-470 or 296-10-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/18/60, filed 3/23/60.]

WAC 296-10-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of hearing, or as soon thereafter as [facts] requiring such continuance come to his knowledge, notify the industrial welfare committee or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The committee or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown the committee or its designated hearing officer may grant such continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix a date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/18/60, filed 3/23/60.]

WAC 296-10-520 Rules of evidence--Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/18/60, filed 3/23/60.]

WAC 296-10-530 Rules of evidence--Tentative admission--Exclusion--Discontinuance--Objections. When objection is made to the admissibility of evidence such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/18/60, filed 3/23/60.]

WAC 296-10-540 Petitions for rule making, amendment or repeal--Who may petition. Any interested person may petition the industrial welfare committee requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/18/60, filed 3/23/60.]

WAC 296-10-550 Petitions for rule making, amendment or repeal--Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full, the petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in question must be set out as well as a suggested amended form if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/18/60, filed 3/23/60.]

WAC 296-10-560 Petitions for rule making, amendment or repeal--Agency must consider. All petitions shall be considered by the industrial welfare committee and the committee may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal or modification of any rule.

[Rule .08.560, effective 3/18/60, filed 3/23/60.]

WAC 296-10-570 Petitions for rule making, amendment or repeal--Notice of disposition. The industrial welfare committee shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/18/60, filed 3/23/60.]

WAC 296-10-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the industrial welfare committee thereof for a declaratory ruling. The committee shall consider the petition and within a reasonable time shall: (1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued; or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(4) If a hearing is held or evidence is submitted as provided in subsection (3), the industrial welfare committee thereof shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/18/60, filed 3/23/60.]

WAC 296-10-590 Forms. (1) Any interested person petitioning the industrial welfare committee for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording "Before the industrial welfare committee." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8-1/2 x 11" or 8-1/2 x 13" in size.

(2) Any interested person petitioning the industrial welfare committee requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

At the top of the page shall appear the wording, "Before the industrial welfare committee." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8-1/2 x 11" or 8-1/2" x 13" in size.

[Rule .08.590, effective 3/18/60, filed 3/23/60.]

Chapter 296-11 WAC
PRACTICE AND PROCEDURE--BOARD OF PILOTAGE COMMISSIONERS

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-11-002 Effective date and validity. [Order 2-68, § 296-11-002, filed 11/1/68; Rule .08.591, effective 3/1/60, filed 3/23/60.] Repealed by 80-03-081 (Order 79-6, Resolution 79-6), filed 3/4/80. Statutory Authority: RCW 88.16.035.

WAC 296-11-001 General rule and information. The chairperson of the board of pilotage commissioners is the secretary of transportation of the state of Washington or the secretary's designee. Information regarding the Pilotage Act, complaints and other matters coming under the provisions of the Pilotage Act and the board's rules and regulations may be obtained by contacting the chairperson or the board's secretary in person or in writing at the Office of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104. All public documents in the custody of the board may be obtained upon request made to the chairperson of the Board of Pilotage Commissioners, Pier 52, Seattle, Washington 98104.

Any matter filed with the chairperson and/or the secretary will be brought to the attention of the board at its next regular meeting, the date of which is the second Thursday of each month. Persons desiring to do so may also attend the board meetings, which are held at Pier 52, Seattle, Washington.

The purpose and scope of activity of the board of pilotage commissioners are set out in chapter 88.16 RCW and are as follows:

Scope: (1) Puget Sound pilotage district.

(2) Grays Harbor pilotage district.

Purpose: The purpose of the board of pilotage commissioners is to prevent the loss of human lives, loss of property and vessels and to protect the marine environment by maintenance of a competent and efficient pilotage service on the state's waters. To accomplish this end the board examines proficiency of potential pilots, licenses pilots, regulates pilots, enforces the use of pilots, sets pilotage rates, receives and investigates reports of accidents involving pilots, keeps records of various matters affecting pilotage and fulfills other responsibilities enumerated in chapter 88.16 RCW.

[Statutory Authority: RCW 88.16.035. 80-03-081 (Order 79-6, Resolution 79-6), § 296-11-001, filed 3/4/80. Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-11-001, filed 8/23/78; Order 2-68, § 296-11-001, filed 11/1/68.]

WAC 296-11-003 Index to documents. The board of pilotage commissioners finds that the preparation and maintenance of an index to documents as required by RCW 42.17.260 would be unduly burdensome. Therefore, such an index will not be maintained. This undue burden is caused by the fact that the board of pilotage commissioners is a small agency of the state of Washington operating with a limited amount of financial resources. Because of the agency's size, its records are organized in an effective and straightforward manner which renders them accessible to the general public without resort to an index as envisioned in RCW 42.17-.260. All indexes which are maintained for agency use will be available for public inspection.

[Statutory Authority: RCW 88.16.035 and 88.16.155. 78-09-057 (Order 78-2, Resolution 78-2), § 296-11-003, filed 8/23/78.]

WAC 296-11-010 Appearance and practice before agency--Who may appear. No person may appear in a representative capacity before the board of pilotage commissioners or its designated hearing officer other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by our state law.

(3) Persons otherwise qualified as possessing the requisite skill to appear and expertly represent others who have applied to the board of pilotage commissioners and have been duly authorized by the board to appear in a representative capacity before the board.

(4) A bona fide officer, partner, or full time employee of an individual firm, association, partnership, or corporation who appears for such individual firm, association, partnership, or corporation.

[Rule .08.010, effective 3/1/60, filed 3/23/60.]

WAC 296-11-020 Appearance and practice before agency--Appearance in certain proceedings may be limited to attorneys. In all hearings involving the taking of testimony and the formulation of a record subject to review by the courts, where the board of pilotage commissioners or its designated hearing officer determines that representative activity in such hearing requires a high degree of legal training, experience, and skill, the board or its designated hearing officer may limit those who may appear in a representative capacity to attorneys at law.

[Rule .08.020, effective 3/1/60, filed 3/23/60.]

WAC 296-11-030 Appearance and practice before agency--Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the board of pilotage commissioners to solicit business by circulars, advertisements or by personal communication or interviews not warranted by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business indirectly by solicitors of any kind.

[Rule .08.030, effective 3/1/60, filed 3/23/60.]

WAC 296-11-040 Appearance and practice before agency--Standards of ethical conduct. All persons appearing in proceedings before the board of pilotage commissioners in a representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the board may decline to permit such person to appear in a representative capacity in any proceeding before the board.

[Rule .08.040, effective 3/1/60, filed 3/23/60.]

WAC 296-11-050 Appearance and practice before agency--Appearance by former employee of board or member of attorney general's staff. No former employee of the board of pilotage commissioners or member of the attorney general's staff may at any time after severing his employment with the board or the attorney general appear, except with the written permission of the board, and in compliance with chapter 42.22 RCW, in a representative capacity on behalf of other parties in a formal proceeding wherein he previously took an active part as a representative of the board.

[Rule .08.050, effective 3/1/60, filed 3/23/60.]

WAC 296-11-060 Appearance and practice before agency--Former employee as expert witness. No former employee of the board of pilotage commissioners shall at any time after severing his employment with the board appear, except with the written permission of the board, and in compliance with chapter 42.22 RCW, as an expert witness on behalf of other parties in a formal proceeding wherein he previously took an active part in the investigation as a representative of the board.

[Rule .08.060, effective 3/1/60, filed 3/23/60.]

WAC 296-11-070 Computation of time. In computing any period of time prescribed or allowed by the board of pilotage commissioners' rules, by order of the board or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday or a legal holiday, in which event the period runs until the end of the next day which is neither a Saturday, Sunday nor a holiday. When the period of time prescribed or allowed is less than seven days, intermediate Saturdays, Sundays and holidays shall be excluded in the computation.

[Rule .08.070, effective 3/1/60, filed 3/23/60.]

WAC 296-11-080 Notice and opportunity for hearing in contested cases. In any contested case, all parties shall be served with a notice at least 20 days before the date set for the hearing. The notice shall state the time, place and issues involved, as required by RCW 34.04.090(1).

[Order 2-68, § 296-11-080, filed 11/1/68; Rule .08.080, effective 3/1/60, filed 3/23/60.]

WAC 296-11-090 Service of process--By whom served. The board of pilotage commissioners shall cause to be served all orders, notices and other papers issued by it, together with any other papers which it is required by law to serve. Every other paper shall be served by the party filing it.

[Rule .08.090, effective 3/1/60, filed 3/23/60.]

WAC 296-11-100 Service of process--Upon whom served. All papers served by either the board of pilotage commissioners or any party shall be served upon all counsel of record at the time of such filing and upon parties not represented by counsel or upon their agents designated by them or by law. Any counsel entering an appearance subsequent to the initiation of the proceeding shall notify all other counsel then of record and all parties not represented by counsel of such fact.

[Rule .08.100, effective 3/1/60, filed 3/23/60.]

WAC 296-11-110 Service of process--Service upon parties. The final order, and any other paper required to be served by the agency upon a party, shall be served upon such party or upon the agent designated by him or by law to receive service of such papers, and a copy shall be furnished to counsel of record.

[Rule .08.110, effective 3/1/60, filed 3/23/60.]

WAC 296-11-120 Service of process--Method of service. Service of papers shall be made personally or, unless otherwise provided by law, by first-class, registered, or certified mail; or by telegraph.

[Rule .08.120, effective 3/1/60, filed 3/23/60.]

WAC 296-11-130 Service of process--When service complete. Service upon parties shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Rule .08.130, effective 3/1/60, filed 3/23/60.]

WAC 296-11-140 Service of process--Filing with agency. Papers required to be filed with the board of pilotage commissioners shall be deemed filed upon actual receipt by the board at the place specified in its rules accompanied by proof of service upon parties required to be served.

[Rule .08.140, effective 3/1/60, filed 3/23/60.]

WAC 296-11-150 Subpoenas--Where provided by law--Form. Every subpoena shall state the name of the state of Washington board of pilotage commissioners and the title of the proceeding, if any, and shall command the person to whom it is directed to attend and give testimony or produce designated books, documents or things under his control at a specified time and place.

[Rule .08.150, effective 3/1/60, filed 3/23/60.]

WAC 296-11-160 Subpoenas--Issuance to parties. Upon application of counsel or other representative authorized to practice before the agency for any party to a contested case, there shall be issued to such party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in such proceeding. The board of pilotage commissioners may issue subpoenas to parties not so represented upon request or upon a showing of general relevance and reasonable scope of the testimony or evidence sought.

[Rule .08.160, effective 3/1/60, filed 3/23/60.]

WAC 296-11-170 Subpoenas--Service. Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to such person and by tendering him on demand, if entitled to make such demand, the fees for one day's attendance and the mileage allowed by law.

[Rule .08.170, effective 3/1/60, filed 3/23/60.]

WAC 296-11-180 Subpoenas--Fees. Witnesses summoned before the board of pilotage commissioners shall be paid by the party at whose instance they appear the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

[Rule .08.180, effective 3/1/60, filed 3/23/60.]

WAC 296-11-190 Subpoenas--Proof of service. The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit, or acknowledgment of service with the board of pilotage commissioners or the officer before whom the witness is required to testify or produce evidence. If service is made by a person other than an officer of the board, and such service has not been acknowledged by the witness, such person shall make an affidavit of service. Failure to make proof of service does not affect the validity of the service.

[Rule .08.190, effective 3/1/60, filed 3/23/60.]

WAC 296-11-200 Subpoenas--Quashing. Upon motion made promptly, and in any event at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed (and upon notice to the party to whom the subpoena was issued) the board of pilotage commissioners or its authorized member or officer may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Rule .08.200, effective 3/1/60, filed 3/23/60.]

WAC 296-11-210 Subpoenas--Enforcement. Upon application and for good cause shown, the board of pilotage commissioners will seek judicial enforcement of subpoenas issued to parties and which have not been quashed.

[Rule .08.210, effective 3/1/60, filed 3/23/60.]

WAC 296-11-220 Subpoenas--Geographical scope. Such attendance of witnesses and such production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Rule .08.220, effective 3/1/60, filed 3/23/60.]

WAC 296-11-230 Depositions and interrogatories in contested cases--Right to take. Except as may be otherwise provided, any party may take the testimony of any person, including a party, by deposition upon oral examination or written interrogatories for use as evidence in the proceeding, except that leave must be obtained if notice of the taking is served by a proponent within twenty days after the filing of a complaint. The attendance of witnesses may be compelled by the use of a subpoena. Depositions shall be taken only in accordance with this rule and the rule of subpoenas.

[Rule .08.230, effective 3/1/60, filed 3/23/60.]

WAC 296-11-240 Depositions and interrogatories in contested cases--Scope. Unless otherwise ordered, the deponent may be examined regarding any matter not privileged, which is relevant to the subject matter involved in the proceeding.

[Rule .08.240, effective 3/1/60, filed 3/23/60.]

WAC 296-11-250 Depositions and interrogatories in contested cases--Officer before whom taken. Within the United States or within a territory or insular possession subject to the dominion of the United States depositions shall be taken before an officer authorized to administer oaths by the laws of the state of Washington or of the place where the examination is held; within a foreign country, depositions shall be taken before a secretary of an embassy or legation, consul general, vice consul or consular agent of the United States, or a person designated by the board of pilotage commissioners or agreed upon by the parties by stipulation in writing filed with the board. Except by stipulation, no deposition shall be taken before a person who is a party or the privy of a party, or a privy of any counsel of a party, or who is financially interested in the proceeding.

[Rule .08.250, effective 3/1/60, filed 3/23/60.]

WAC 296-11-260 Depositions and interrogatories in contested cases--Authorization. A party desiring to take the deposition of any person upon oral examination shall give reasonable notice of not less than three days in writing to the board of pilotage commissioners and all parties. The notice shall state the time and place for taking the deposition, the name and address of each person to be examined, if known, and if the name is not known, a general description sufficient to identify him or the particular class or group to which he belongs. On motion of a party upon whom the notice is served, the hearing officer may for cause shown, enlarge or shorten the time. If the parties so stipulate in writing, depositions may be taken before any person, at any time or place, upon any notice, and in any manner and when so taken may be used as other depositions.

[Rule .08.260, effective 3/1/60, filed 3/23/60.]

WAC 296-11-270 Depositions and interrogatories in contested cases--Protection of parties and deponents. After notice is served for taking a deposition, upon its own motion or upon motion reasonably made by any party or by the person to be examined and upon notice and for good cause shown the board of pilotage commissioners or its designated hearing officer may make an order that the deposition shall not be taken, or that it may be taken only at some designated place other than that stated in the notice, or that it may be taken only on written interrogatories, or that certain matters shall not be inquired into, or that the scope of the examination shall be limited to certain matters, or that the examination shall be limited to certain matters, or that the examination shall be held with no one present except the parties to the action and their officers or counsel, or that after being sealed, the deposition shall be opened only by order of the board, or that business secrets or secret processes, developments, or research need not be disclosed, or that the parties shall simultaneously file specified documents or information enclosed in sealed envelopes to be opened as directed by the board, or the board may make any other order which justice requires to protect the party or witness from annoyance, embarrassment, or oppression. At any time during the taking of the deposition, on motion of any party or of the deponent and upon a showing that the examination is being conducted in bad faith or in such manner as unreasonably to annoy, embarrass, or oppress the deponent or party, the board or its designated hearing officer may order the officer conducting the examination to cease forthwith from taking the deposition, or may limit the scope and manner of the taking of the deposition as above provided. If the order made terminates the examination, it shall be resumed thereafter only upon the order of the agency. Upon demand of the objecting party or deponent, the taking of the deposition shall be suspended for the time necessary to make a motion for an order.

[Rule .08.270, effective 3/1/60, filed 3/23/60.]

WAC 296-11-280 Depositions and interrogatories in contested cases--Oral examination and cross-examination. Examination and cross-examination shall proceed as at an oral hearing. In lieu of participating in the oral examination, any party served with notice of taking a deposition may transmit written cross interrogatories to the officer who, without first disclosing them to any person, and after the direct testimony is complete, shall propound them seriatim to the deponent and record or cause the answers to be recorded verbatim.

[Rule .08.280, effective 3/1/60, filed 3/23/60.]

WAC 296-11-290 Depositions and interrogatories in contested cases--Recordation. The officer before whom the deposition is to be taken shall put the witness on oath and shall personally or by someone acting under his direction and in his presence, record the testimony by typewriter directly or by transcription from stenographic notes, wire or record recorders, which record shall separately and consecutively number each interrogatory. Objections to the notice, qualifications of the officer taking the deposition, or to the manner of taking it, or to the evidence presented or to the conduct of the officer, or of any party, shall be noted by the officer upon the deposition. All objections by any party not so made are waived.

[Rule .08.290, effective 3/1/60, filed 3/23/60.]

WAC 296-11-300 Depositions and interrogatories in contested cases--Signing attestation and return. When the testimony is fully transcribed the deposition shall be submitted to the witness for examination and shall be read to or by him, unless such examination and reading are waived by the witness and by the parties. Any changes in form or substance which the witness desires

to make shall be entered upon the deposition by the officer with a statement of the reasons given by the witness for making them. The deposition shall then be signed by the witness, unless the parties by stipulation waive the signing or the witness is ill or cannot be found or refuses to sign. If the deposition is not signed by the witness, the officer shall sign it and state on the record the fact of the waiver or of the illness or absence of the witness or the fact of the refusal to sign together with the reasons, if any, given therefore; and the deposition may then be used as fully as though signed, unless on a motion to suppress the board of pilotage commissioners holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

The officer shall certify on the deposition that the witness was duly sworn by him and that the deposition is a true record of the testimony given by the witness. He shall then securely seal the deposition in an envelope indorsed with the title of proceeding and marked "Deposition of (here insert name of witness)" and shall promptly send it by registered or certified mail to the board of pilotage commissioners, or its designated hearing officer, for filing. The party taking the deposition shall give prompt notice of its filing to all other parties. Upon payment of reasonable charges therefor, the officer shall furnish a copy of the deposition to any party or to the deponent.

[Rule .08.300, effective 3/1/60, filed 3/23/60.]

WAC 296-11-310 Depositions and interrogatories in contested cases--Use and effect. Subject to rulings by the hearing officer upon objections a deposition taken and filed as provided in this rule will not become a part of the record in the proceeding until received in evidence by the hearing officer upon his own motion or the motion of any party. Except by agreement of the parties or ruling of the hearing officer, a deposition will be received only in its entirety. A party does not make a party, or the privy of a party, or any hostile witness his witness by taking his deposition. Any party may rebut any relevant evidence contained in a deposition whether introduced by him or any other party.

[Rule .08.310, effective 3/1/60, filed 3/23/60.]

WAC 296-11-320 Depositions and interrogatories in contested cases--Fees of officers and deponents. Deponents whose depositions are taken and the officers taking the same shall be entitled to the same fees as are paid for like services in the superior courts of the state of Washington which fees shall be paid by the party at whose instance the depositions are taken.

[Rule .08.320, effective 3/1/60, filed 3/23/60.]

WAC 296-11-330 Depositions upon interrogatories--Submission of interrogatories. Where the deposition is taken upon written interrogatories, the party offering the testimony shall separately and consecutively number each interrogatory and file and serve them with a notice stating the name and address of the person who is to answer them and the name or descriptive title and address of the officer before whom they are to be taken. Within 10 days thereafter a party so served may serve cross-interrogatories upon the party proposing to take the deposition. Within five days thereafter, the latter may serve redirect interrogatories upon the party who served cross-interrogatories.

[Rule .08.330, effective 3/1/60, filed 3/23/60.]

WAC 296-11-340 Depositions upon interrogatories--Interrogation. Where the interrogatories are forwarded to an officer authorized to administer oaths as provided in WAC 296-11-250 the officer taking the same after duly swearing the deponent, shall read to him seriatim, one interrogatory at a time and cause the same and the answer thereto to be recorded before the succeeding interrogatory is asked. No one except the deponent, the officer and the court reporter or stenographer recording and transcribing it shall be present during the interrogation.

[Rule .08.340, effective 3/1/60, filed 3/23/60.]

WAC 296-11-350 Depositions upon interrogatories--Attestation and return. The officer before whom interrogatories are verified or answered shall (1) certify under his official signature and seal that the deponent was duly sworn by him, that the interrogatories and answers are a true record of the deponent's testimony, that no one except deponent, the officer and the stenographer were present during the taking, and that neither he nor the stenographer, to his knowledge is a party, privy to a party, or interested in the event of the proceedings, and (2) promptly send by registered or certified mail the original copy of the deposition and exhibits with his attestation to the board of pilotage commissioners, or its designated hearing officer, one copy to the counsel who submitted the interrogatories and another copy to the deponent.

[Rule .08.350, effective 3/1/60, filed 3/23/60.]

WAC 296-11-360 Depositions upon interrogatories--Provisions of deposition rule. In all other respects, depositions upon interrogatories shall be governed by the previous deposition rule.

[Rule .08.360, effective 3/1/60, filed 3/23/60.]

WAC 296-11-370 Official notice--Matters of law. The board of pilotage commissioners or its hearing officer, upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals and committee reports; decisions of administrative agencies of the state of Washington, executive orders and proclamations by the governor; and all rules, orders and notices filed with the code reviser.

(3) **Governmental organization.** Organization, territorial limitations, officers, departments, and general administration of the government of the state of Washington, the United States, the several states and foreign nations;

(4) **Agency organization.** The board of pilotage commissioners' organization, administration, officers, personnel, official publications, and practitioners before its bar.

[Rule .08.370, effective 3/1/60, filed 3/23/60.]

WAC 296-11-380 Official notice--Material facts. In the absence of controverting evidence, the board of pilotage commissioners and its hearing officers, upon request made before or during a hearing, may officially notice:

(1) **Agency proceedings.** The pendency of, the issues and position of the parties therein, and the disposition of any proceeding then pending before or theretofore concluded by the board of pilotage commissioners;

(2) **Business customs.** General customs and practices followed in the transaction of business;

(3) **Notorious facts.** Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts which are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including but not exclusively, facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency;

(4) **Technical knowledge.** Matters within the technical knowledge of the board of pilotage commissioners as a body of experts, within the scope or pertaining to the subject matter of its statutory duties, responsibilities or jurisdiction;

(5) **Request or suggestion.** Any party may request, or the hearing officer or the board of pilotage commissioners may suggest, that official notice be taken of a material fact, which shall be clearly and precisely stated, orally on the record, at any prehearing conference or oral hearing or argument, or may make such request or suggestion by written notice, any pleading, motion, memorandum, or brief served upon all parties, at any time prior to a final decision;

(6) **Statement.** Where an initial or final decision of the board of pilotage commissioners rests in whole or in part upon official notice of a material fact, such fact shall be clearly and precisely stated in such decision. In determining whether to take official notice of material facts, the hearing officer of the board may consult any source of pertinent information, whether or not furnished as it may be, by any party and whether or not admissible under the rules of evidence;

(7) **Controversion.** Any party may controvert a request or a suggestion that official notice of a material fact be taken at the time the same is made if it be made orally, or by a pleading, reply or brief in response to the pleading or brief or notice in which the same is made or suggested. If any decision is stated to rest in whole or in part upon official notice of a material fact which the parties have not had a prior opportunity to controvert, any party may controvert such fact by appropriate exceptions if such notice be taken in an initial or intermediate decision or by a petition for reconsideration if notice of such fact be taken in a final report. Such controversion shall concisely and clearly set forth the sources, authority and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision;

(8) **Evaluation of evidence.** Nothing herein shall be construed to preclude the board of pilotage commissioners or its authorized agents from utilizing their experience, technical competence, and specialized knowledge in the evaluation of the evidence presented to them.

[Rule .08.380, effective 3/1/60, filed 3/23/60.]

WAC 296-11-390 Presumptions. Upon proof of the predicate facts specified in the following six subsections hereof without substantial dispute and by direct, clear, and convincing evidence, the board of pilotage commissioners, with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) **Continuity.** That a fact of a continuous nature, proved to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one which usually exists for at least that period of time;

(2) **Identity.** That persons and objects of the same name and description are identical;

(3) **Delivery.** Except in a proceeding where the liability of the carrier for nondelivery is involved, that mail matter, communications, express or freight, properly addressed, marked, billed and delivered respectively to the post office, telegraph, cable or radio company, or authorized common carrier of property with all postage, tolls and charges properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) **Ordinary course.** That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact which in the ordinary and usual course of affairs, usually and regularly co-exists with the fact presumed;

(5) **Acceptance of benefit.** That a person for whom an act is done or to whom a transfer is made has, does or will accept same where it is clearly in his own self-interest so to do;

(6) **Interference with remedy.** That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed or withheld by a party in control thereof, would if produced, corroborate the evidence of the adversary party with respect to such fact.

[Rule .08.390, effective 3/1/60, filed 3/23/60.]

WAC 296-11-400 Stipulations and admissions of record. The existence or nonexistence of a material fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound thereby, and no other evidence with respect thereto will be received upon behalf of such party, provided: (1) **Upon whom binding.** Such a stipulation or admission is binding upon the parties by whom it is made,

their privies and upon all other parties to the proceeding who do not expressly and unequivocally deny the existence or nonexistence of the material fact so admitted or stipulated, upon the making thereof, if made on the record at a pre–hearing conference, oral hearing, oral argument or by a writing filed and served upon all parties within five days after a copy of such stipulation or admission has been served upon them;

(2) **Withdrawal.** Any party bound by a stipulation or admission of record at any time prior to final decision may be permitted to withdraw the same in whole or in part by showing to the satisfaction of the hearing officer or the board of pilotage commissioners that such stipulation or admission was made inadvertently or under a bona fide mistake of fact contrary to the true fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Rule .08.400, effective 3/1/60, filed 3/23/60.]

WAC 296-11-410 Form and content of decisions in contested cases. Every decision and order, whether proposed, initial, or final, shall: (1) Be correctly captioned as to name of agency and name of proceeding;

(2) Designate all parties and counsel to the proceeding;

(3) Include a concise statement of the nature and background of the proceeding;

(4) Be accompanied by appropriate numbered findings of fact and conclusions of law;

(5) Whenever practical, include the reason or reasons for the particular order or remedy afforded;

(6) Wherever practical, be referenced to specific provisions of the law and/or regulations appropriate thereto, together with reasons and precedents relied upon to support the same.

[Rule .08.410, effective 3/1/60, filed 3/23/60.]

WAC 296-11-420 Definition of issues before hearing. In all proceedings the issues to be adjudicated shall be made initially as precise as possible, in order that hearing officers may proceed promptly to conduct the hearings on relevant and material matter only.

[Rule .08.420, effective 3/1/60, filed 3/23/60.]

WAC 296-11-430 Prehearing conference rule--Authorized. In any proceeding the board of pilotage commissioners or its designated hearing officer upon its or his own motion, or upon the motion of one of the parties or their qualified representatives, may in its or his discretion direct the parties or their qualified representatives to appear at a specified time and place for a conference to consider (1) The simplification of the issues;

(2) The necessity of amendments to the pleadings;

(3) The possibility of obtaining stipulations, admissions of facts and of documents;

(4) The limitation of the number of expert witnesses;

(5) Such other matters as may aid in the disposition of the proceeding.

[Rule .08.430, effective 3/1/60, filed 3/23/60.]

WAC 296-11-440 Prehearing conference rule--Record of conference action. The board of pilotage commissioners or its designated hearing officer shall make an order or statement which recites the action taken at the conference, the amendments allowed to the pleadings and the agreements made by the parties or their qualified representatives as to any of the matters considered, including the settlement or simplification of issues, and which limits the issues for hearing to those not disposed of by admissions or agreements; and such order or statement shall control the subsequent course of the proceeding unless modified for good cause by subsequent order.

[Rule .08.440, effective 3/1/60, filed 3/23/60.]

WAC 296-11-450 Submission of documentary evidence in advance. Where practicable the board of pilotage commissioners or its designated hearing officer may require:

(1) That all documentary evidence which is to be offered during the taking of evidence be submitted to the hearing examiner and to the other parties to the proceeding sufficiently in advance of such taking of evidence to permit study and preparation of cross–examination and rebuttal evidence;

(2) That documentary evidence not submitted in advance, as may be required by subsection (1), be not received in evidence in the absence of a clear showing that the offering party had good cause for his failure to produce the evidence sooner;

(3) That the authenticity of all documents submitted in advance in a proceeding in which such submission is required, be deemed admitted unless written objection thereto is filed prior to the hearing, except that a party will be permitted to challenge such authenticity at a later time upon a clear showing of good cause for failure to have filed such written objection.

[Rule .08.450, effective 3/1/60, filed 3/23/60.]

WAC 296-11-460 Excerpts from documentary evidence. When portions only of a document are to be relied upon, the offering party shall prepare the pertinent excerpts, adequately identified, and shall supply copies of such excerpts, together with a statement indicating the purpose for which such materials will be offered, to the hearing examiner and to the other parties. Only the excerpts, so prepared and submitted, shall be received in the record. However, the whole of the original document shall be made available for examination and for use by all parties to the proceeding.

[Rule .08.460, effective 3/1/60, filed 3/23/60.]

WAC 296-11-470 Expert or opinion testimony and testimony based on economic or statistical data--Number and qualifications of witnesses. That the hearing examiner or other appropriate officer in all classes of cases where practicable make an effort to have the interested parties agree upon the witness or witnesses who are to give expert or opinion testimony, either by selecting one or more to speak for all parties or by limiting the number for each party; and, if the interested parties cannot

agree, require them to submit to him and to the other parties written statements containing the names, addresses and qualifications of their respective opinion or expert witnesses, by a date determined by him and fixed sufficiently in advance of the hearing to permit the other interested parties to investigate such qualifications.

[Rule .08.470, effective 3/1/60, filed 3/23/60.]

WAC 296-11-480 Expert or opinion testimony and testimony based on economic or statistical data--Written sworn statements. That the hearing examiner or other appropriate officer, in all classes of cases in which it is practicable and permissible, require, and when not so permissible, make every effort to bring about by voluntary submission, that all direct opinion or expert testimony and all direct testimony based on economic or statistical data be reduced to written sworn statements, and, together with the exhibits upon which based, be submitted to him and to the other parties to the proceeding by a date determined by the hearing officer and fixed a reasonable time in advance of the hearing; and that such sworn statements be acceptable as evidence upon formal offer at the hearing, subject to objection on any ground except that such sworn statements shall not be subject to challenge because the testimony is not presented orally, and provided that witnesses making such statements shall not be subject to cross-examination unless a request is made sufficiently in advance of the hearing to insure the presence of the witnesses.

[Rule .08.480, effective 3/1/60, filed 3/23/60.]

WAC 296-11-490 Expert or opinion testimony and testimony based on economic or statistical data--Supporting data. That the hearing examiner or other appropriate officer, in his discretion but consistent with the rights of the parties, cause the parties to make available for inspection in advance of the hearing, and for purposes of cross-examination at the hearing, the data underlying statements and exhibits submitted in accordance with WAC 296-11-480, but, wherever practicable that he restrict to a minimum the placing of such data in the record.

[Rule .08.490, effective 3/1/60, filed 3/23/60.]

WAC 296-11-500 Expert or opinion testimony and testimony based on economic or statistical data--Effect of noncompliance with WAC 296-11-470 or 296-11-480. Whenever the manner of introduction of opinion or expert testimony or testimony based on economic or statistical data is governed by requirements fixed under the provisions of WAC 296-11-470 or 296-11-480, such testimony not submitted in accordance with the relevant requirements shall not be received in evidence in the absence of a clear showing that the offering party had good cause for his failure to conform to such requirements.

[Rule .08.500, effective 3/1/60, filed 3/23/60.]

WAC 296-11-510 Continuances. Any party who desires a continuance shall, immediately upon receipt of notice of a hearing, or as soon thereafter as facts requiring such continuance come to his knowledge, notify the board of pilotage commissioners or its designated hearing officer of said desire, stating in detail the reasons why such continuance is necessary. The board or its designated hearing officer, in passing upon a request for continuance, shall consider whether such request was promptly and timely made. For good cause shown, the board or its designated hearing officer may grant such a continuance and may at any time order a continuance upon its or his own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the examiner or other officer conducting the hearing may in his discretion continue the hearing and fix the date for introduction of additional evidence or presentation of argument. Such oral notice shall constitute final notice of such continued hearing.

[Rule .08.510, effective 3/1/60, filed 3/23/60.]

WAC 296-11-520 Rules of evidence--Admissibility criteria. Subject to the other provisions of these rules, all relevant evidence is admissible which, in the opinion of the officer conducting the hearing, is the best evidence reasonably obtainable, having due regard for its necessity, availability and trustworthiness. In passing upon the admissibility of evidence, the officer conducting the hearing shall give consideration to, but shall not be bound to follow, the rules of evidence governing civil proceedings, in matters not involving trial by jury, in the superior court of the state of Washington.

[Rule .08.520, effective 3/1/60, filed 3/23/60.]

WAC 296-11-530 Rules of evidence--Tentative admission--Exclusion--Discontinuance--Objections. When objection is made to the admissibility of evidence, such evidence may be received subject to a later ruling. The officer conducting the hearing may, in his discretion, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. Parties objecting to the introduction of evidence shall state the precise grounds of such objection at the time such evidence is offered.

[Rule .08.530, effective 3/1/60, filed 3/23/60.]

WAC 296-11-540 Petitions for rule making, amendment or repeal--Who may petition. Any interested person may petition the board of pilotage commissioners requesting the promulgation, amendment, or repeal of any rule.

[Rule .08.540, effective 3/1/60, filed 3/23/60.]

WAC 296-11-550 Petitions for rule making, amendment or repeal--Requisites. Where the petition requests the promulgation of a rule, the requested or proposed rule must be set out in full. The petition must also include all the reasons for the requested rule together with briefs of any applicable law. Where the petition requests the amendment or repeal of a rule presently in effect, the rule or portion of the rule in

question must be set out as well as a suggested amended form, if any. The petition must include all reasons for the requested amendment or repeal of the rule.

[Rule .08.550, effective 3/1/60, filed 3/23/60.]

WAC 296-11-560 Petitions for rule making, amendment or repeal--Agency must consider. All petitions shall be considered by the board of pilotage commissioners and the board may, in its discretion, order a hearing for the further consideration and discussion of the requested promulgation, amendment, repeal, or modification of any rule.

[Rule .08.560, effective 3/1/60, filed 3/23/60.]

WAC 296-11-570 Petitions for rule making, amendment or repeal--Notice of disposition. The board of pilotage commissioners shall notify the petitioning party within a reasonable time of the disposition, if any, of the petition.

[Rule .08.570, effective 3/1/60, filed 3/23/60.]

WAC 296-11-580 Declaratory rulings. As prescribed by RCW 34.04.080, any interested person may petition the board of pilotage commissioners for a declaratory ruling. The board shall consider the petition and within a reasonable time the board shall:

(1) Issue a nonbinding declaratory ruling; or

(2) Notify the person that no declaratory ruling is to be issued or

(3) Set a reasonable time and place for a hearing or the submission of written evidence upon the matter, and give reasonable notification to the person of the time and place for such hearing or submission and of the issues involved.

(4) If a hearing is held or evidence is submitted as provided in subsection (3), the board shall within a reasonable time:

(a) Issue a binding declaratory rule; or

(b) Issue a nonbinding declaratory ruling; or

(c) Notify the person that no declaratory ruling is to be issued.

[Rule .08.580, effective 3/1/60, filed 3/23/60.]

WAC 296-11-590 Forms. (1) Any interested person petitioning the board of pilotage commissioners for a declaratory ruling pursuant to RCW 34.04.080, shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "Before the board of pilotage commissioners, state of Washington," on the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for a declaratory ruling." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party. The second paragraph shall state all rules or statutes that may be brought into issue by the petition. Succeeding paragraphs shall set out the state of facts relied upon in form similar to that applicable to complaints in civil actions before the superior courts of this state. The concluding paragraphs shall contain the prayer of the petitioner. The petition shall be subscribed and verified in the manner prescribed for verification of complaints in the superior courts of this state.

(c) The original and two legible copies shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

(2) Any interested person petitioning the board of pilotage commissioners requesting the promulgation, amendment or repeal of any rules shall generally adhere to the following form for such purpose.

(a) At the top of the page shall appear the wording "Before the board of pilotage commissioners, state of Washington." On the left side of the page below the foregoing the following caption shall be set out: "In the matter of the petition of (name of petitioning party) for (state whether promulgation, amendment or repeal) of rule (or rules)." Opposite the foregoing caption shall appear the word "petition."

(b) The body of the petition shall be set out in numbered paragraphs. The first paragraph shall state the name and address of the petitioning party and whether petitioner seeks the promulgation of new rule or rules, or amendment or repeal of existing rule or rules. The second paragraph, in case of a proposed new rule or amendment of an existing rule, shall set forth the desired rule in its entirety. Where the petition is for amendment, the new matter shall be underscored and the matter proposed to be deleted shall appear in double parentheses. Where the petition is for repeal of an existing rule, such shall be stated and the rule proposed to be repealed shall either be set forth in full or shall be referred to by agency rule number. The third paragraph shall set forth concisely the reasons for the proposal of the petitioner and shall contain a statement as to the interest of the petitioner in the subject matter of the rule. Additional numbered paragraphs may be used to give full explanation of petitioner's reason for the action sought.

(c) Petitions shall be dated and signed by the person or entity named in the first paragraph or by his attorney. The original and two legible copies of the petition shall be filed with the agency. Petitions shall be on white paper, either 8 1/2" x 11" or 8 1/2" x 13" in size.

[Rule .08.590, effective 3/1/60, filed 3/23/60.]

Chapter 296-13 WAC
PRACTICE AND PROCEDURE--ELECTRICAL ADVISORY BOARD AND ELECTRICAL EXAMINING BOARD

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-13-070 Solicitation of business unethical. [§ VI, filed 10/15/65.] Repealed by 84-18-009 (Order 84-16), filed 8/27/84. Statutory Authority: RCW 19.28.123 and 19.28.590.

296-13-120 Administrative Procedure Act. [§ XI, filed 10/15/65.] Repealed by 84-18-009 (Order 84-16), filed 8/27/84. Statutory Authority: RCW 19.28.123 and 19.28.590.

WAC 296-13-001 Foreword. (1) The electrical law, chapter 19.28 RCW, establishes the electrical advisory board and the electrical examining board and fixes their responsibilities. The advisory board's principal function is to advise the department in adopting rules with respect to electrical installations and appliances. The advisory board will also act as a board of appeals in contested cases regarding the application or interpretation of a rule. The examining board's principal function is to establish tests and test procedures for electricians and administrators. The examining board will also act as a board of appeals in contested cases regarding the revocation or suspension of an electrical contractor's license or an electrician's or administrator's certificate.

(2) The purpose of this chapter is to provide a uniform procedure for persons, firms, corporations, or other entities to (a) communicate with the department about rules that should be adopted, amended, or repealed, (b) appeal an order of the department revoking or suspending a contractor's license, an electrician's certificate, or an administrator's certificate, and (c) appeal a ruling or interpretation of the provisions of chapter 19.28 RCW or chapter 296-46 WAC made by the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-001, filed 8/27/84; Foreword, filed 10/15/65.]

WAC 296-13-010 Definitions. Whenever used in these rules, the words:

(1) Administrative law judge: Means an administrative law judge appointed pursuant to chapter 34.12 RCW.

(2) Advisory board: Means the electrical advisory board established pursuant to RCW 19.28.065.

(3) Board: Means the electrical advisory board and the electrical examining board. The term "board" also includes an administrative law judge or a board member appointed by the board to hear a contested case.

(4) Chapter: Means chapter 296-13 WAC.

(5) Contested case: Means a contested case as defined by RCW 34.04.010(3). It includes appeals from decisions or orders of the department revoking or suspending an electrical contractor's license or an administrator's or electrician's certificate. It also includes challenges to the department's interpretation of the installation requirements of chapters 19.28 RCW and 296-46 WAC.

(6) Department: Means the department of labor and industries of the state of Washington.

(7) Director: Means the director of the department.

(8) Examining board: Means the electrical examining board established pursuant to RCW 19.28.123.

(9) Proceeding: Means any matter before the board other than a contested case.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-010, filed 8/27/84; Definitions, filed 10/15/65.]

WAC 296-13-020 Officers. In addition to the chairperson, the board shall elect from its members a vice chairperson who shall perform all functions of the chairperson in his or her absence.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-020, filed 8/27/84; § I, filed 10/15/65.]

WAC 296-13-030 Internal management. The board adopts *Roberts' Rules of Order*, revised as its rules of procedure.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-030, filed 8/27/84; § II, filed 10/15/65.]

WAC 296-13-035 Dates of meetings. (1) The advisory board shall hold regular meetings on the last Friday of January, April, July, and October of each year.

(2) The examining board shall hold regular meetings on the first Monday of February, May, August, and November of each year.

(3) The director or the chairperson of the board may call a special meeting at any other time.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-035, filed 8/27/84.]

WAC 296-13-040 Duties of advisory board. (1) The advisory board shall study proposed rules submitted to it by the department and shall make recommendations concerning their adoption.

(2) The advisory board shall develop and submit for consideration to the department administrative procedures, organizational plans, and rules relating to improving the functions of the electrical section.

(3) The advisory board shall at each meeting consider any written proposals made by any persons, firms, corporations, or other entities for electrical rules or for changes in administrative procedures of the electrical section.

(4) The advisory board shall hear formal appeals in contested cases involving a ruling or interpretation of the provisions of chapters 19.28 RCW and 296-46 WAC made by the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-040, filed 8/27/84; § III, filed 10/15/65.]

WAC 296-13-045 Duties of examining board. (1) The examining board shall consider proposed expenditures from the electrical fund.

(2) The examining board shall establish tests and test procedures for journeyman and specialty electricians and for general and specialty administrators.

(3) The examining board will hear informal appeals, including those from persons who desire to contest:

(a) Decisions of the department that they do not qualify to take an examination;

(b) The loss of a certificate because of a failure timely to renew the certificate; and

(c) Grades given on examinations for administrator or specialty electrician certificates.

(4) The examining board will hear formal appeals in contested cases involving an order of the department that revokes or suspends an electrical contractor's license, an administrator's certificate, or an electrician's certificate, or lessens the number of hours of work a trainee electrician has accumulated.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-045, filed 8/27/84.]

WAC 296-13-050 Hearings. (1) The board will grant a formal hearing on contested cases. It will grant an informal hearing on all other proceedings that are within its jurisdiction.

(2) A person, firm, corporation, or other entity that desires a formal hearing on a contested case must file a written appeal of the department's decision, order, or interpretation with the board. An appeal of a decision or order of the department must be filed within fifteen days of the day the appellant received notice of the department's decision or order.

(3) The board may delegate to an administrative law judge or a board member the responsibility to preside over the hearing and to issue a proposed decision and order. If the board does so, the administrative law judge or a board member shall set the time and place for the hearing. If the board retains the responsibility to preside over the hearing, the board shall set the time and place.

(4) A person, firm, corporation, or other entity desiring an informal hearing on a proceeding other than a contested case shall file a written request to that effect with the board. The written request should describe concisely the matters or proposals on which the informal hearing is requested.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-050, filed 8/27/84; § IV, filed 10/15/65.]

WAC 296-13-052 Hearing before administrative law judge or a board member. An administrative law judge or a board member to whom the board has delegated the authority to preside over a hearing in a contested case may exercise all powers the board could exercise in the course of the hearing. After the hearing, the administrative law judge or a board member shall serve on each party and file with the board a proposed decision.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-052, filed 8/27/84.]

WAC 296-13-053 Appeal of proposed decision to board. A party to a contested case may appeal a proposed decision to the full board within thirty days after a copy of the proposed decision is served upon that party. The appeal shall be filed with the board as provided in WAC 296-13-057. If no appeal is filed, the proposed decision becomes final with no further action on the part of the board.

The notice of appeal must specify the contentions of the appealing party, and must specify to which conclusions of law and findings of fact the party takes exception.

The appeal shall be based on the record of the hearing. The board shall not grant a hearing de novo.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-053, filed 8/27/84.]

WAC 296-13-055 Quorum. A majority of the board constitutes a quorum for purposes of making a decision in a contested case. If a majority does not attend a hearing on a contested case, the board may either continue the hearing to a date certain or may hear the testimony and arguments. If the board hears the testimony and arguments, the members of the board who are absent may make their decisions after hearing the tape recording or reading the transcript, of the hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-055, filed 8/27/84.]

WAC 296-13-057 Place and time of filing. A paper that must be filed with the board shall be filed only at

the Office of the Administrator, Electrical Section, 300 W. Harrison, Seattle, WA 98119. The paper may be filed by ordinary mail, certified or registered mail, telegram, or by personal delivery. The date of filing is the date the paper is actually received in the office of the administrator.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-057, filed 8/27/84.]

WAC 296-13-060 Appearance and practice before board. No person may appear as a representative in a contested case before the board other than the following:

(1) Attorneys at law qualified to practice before the supreme court of the state of Washington.

(2) Attorneys at law qualified to practice before the highest court of record of another state, if the attorneys at law of the state of Washington are permitted to appear as representatives before administrative agencies of the other state, and if not otherwise prohibited by Washington law.

(3) An owner, officer, partner, or full-time employee of a firm, association, organization, partnership, or corporation who appears for the firm, association, organization, partnership, or corporation.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-060, filed 8/27/84; § V, filed 10/15/65.]

WAC 296-13-080 Standards of ethical conduct. All persons appearing in proceedings or contested cases before the board as a representative shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If a person does not conform to these standards, the board may decline to permit the person to appear as a representative in any proceeding or contested case before the board.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-080, filed 8/27/84; § VII, filed 10/15/65.]

WAC 296-13-090 Appearance by former employee. No former employee of the board, the department, or the attorney general's staff may at any time after severing his or her employment with the board, the department, or the attorney general appear as a representative for another party in any proceeding or contested case in which he or she previously took an active part as a representative of the board or the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-090, filed 8/27/84; § VIII, filed 10/15/65.]

WAC 296-13-100 Former employee as expert witness. Except with the written permission of the board, no former employee of the board or the department shall appear, after severing his or her employment with the board or the department, as an expert witness for another party in any proceeding or contested case in which he or she previously took an active part in the investigation as a representative of the board or the department.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-100, filed 8/27/84; § IX, filed 10/15/65.]

WAC 296-13-110 Computation of time. In computing any period of time prescribed or allowed by any applicable statute or rule, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included, unless it is a Saturday, Sunday, or legal holiday, in which case the period runs until the next day that is not a Saturday, Sunday, or holiday.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-110, filed 8/27/84; § X, filed 10/15/65.]

WAC 296-13-130 Notice and opportunity for hearing. (1) In any contested case the board shall serve all parties with a notice and opportunity for hearing not less than twenty days before the date set for hearing. The notice shall state the time and place of the hearing and the issues involved, as required by RCW 34.04.090.

(2) In any other proceeding before the board, the board shall give reasonable notice and an opportunity to be heard by mail or by telephone not less than two days before the date set for the informal hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-130, filed 8/27/84.]

WAC 296-13-140 Service of process--By whom served. The board shall cause to be served all orders, notices, and other papers it issues that pertain to a contested case, together with any other papers it is required by law to serve. Every other paper that must be served shall be served by the party that files it.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-140, filed 8/27/84.]

WAC 296-13-150 Service of process--Upon whom served. All papers served by either the board or a party shall be served upon all counsel of record at the time the paper is served and upon parties not represented by counsel or upon their representatives designated by them or by law. Any counsel that enters an appearance after the beginning of the contested case shall notify all other counsel then of record and all parties not represented by counsel of his or her appearance.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-150, filed 8/27/84.]

WAC 296-13-160 Service of process upon parties. The final order, and any other paper the board must serve upon a party, shall be served upon each party or upon his or her representative. If the board serves a paper on a party personally, the board shall furnish a copy to the representative of record of the party. Service on the counsel or other representative representing a party constitutes service on the party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-160, filed 8/27/84.]

WAC 296-13-170 Method of service of process. Papers shall be served personally, by registered or certified mail, or by telegraph.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-170, filed 8/27/84.]

WAC 296-13-180 When service of process is complete. Service upon a party shall be regarded as complete: By mail, upon deposit in the United States mail properly stamped and addressed; by telegraph, when deposited with a telegraph company properly addressed and with charges prepaid.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-180, filed 8/27/84.]

WAC 296-13-190 Subpoenas. (1) In a contested case, upon application of a party or a representative, the board shall issue to the party subpoenas requiring the attendance and testimony of witnesses or the production of evidence in the contested case. The board may condition the issuance of the subpoenas upon a showing of the general relevance and reasonable scope of the testimony or evidence sought. An attorney of a party in a contested case may issue subpoenas under his or her own authority.

(2) Every subpoena shall state the name of the board and the title of the proceeding, and shall command the person to whom it is directed to attend at a specified time and place and give testimony or to produce designated books, documents, or things under his or her control.

(3) Attendance of witnesses and production of evidence may be required from any place in the state of Washington, at any designated place of hearing.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-190, filed 8/27/84.]

WAC 296-13-200 Subpoenas--Service and fees. (1) Unless the service of a subpoena is acknowledged on its face by the person subpoenaed, service shall be made by delivering a copy of the subpoena to the person and by tendering him or her on demand the fees for one day's attendance and the mileage allowed by law.

(2) Witnesses summoned before the agency shall be paid, by the party at whose instance they appear, the same fees and mileage that are paid to witnesses in the superior courts of the state of Washington.

(3) The person serving the subpoena shall make proof of service by filing the subpoena and the required return, affidavit, or acknowledgement of service with the board. Failure to make proof of service does not affect the validity of the service.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-200, filed 8/27/84.]

WAC 296-13-210 Quashing of subpoenas. Upon motion made at or before the time specified in the subpoena for compliance, by the person to whom the subpoena is directed and upon notice to the party to whom the subpoena was issued, the board may (1) quash or modify the subpoena if it is unreasonable or requires evidence not relevant to any matter in issue, or (2) condition denial of the motion upon just and reasonable conditions.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-210, filed 8/27/84.]

WAC 296-13-220 Enforcement of subpoenas. Upon application and for good cause shown a party may seek judicial enforcement of subpoenas that have been issued and that have not been quashed.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-220, filed 8/27/84.]

WAC 296-13-230 Right to take depositions and interrogatories in contested cases. (1) A party may take the testimony of any person, including a party, by deposition upon oral examination or written interrogatories for use as evidence in a contested case, except that leave of the deponent must be obtained if a proponent serves notice of the deposition or interrogatories on the deponent within twenty days after the filing of an appeal. The attendance of the deponent may be compelled by the use of a subpoena. Depositions shall be taken only in accordance with this rule and the rule on subpoenas.

(2) Unless the board otherwise orders, the deponent may be examined regarding any matter that is relevant to the subject matter involved in the contested case and is not privileged.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-230, filed 8/27/84.]

WAC 296-13-240 Officer before whom depositions are taken. Within the United States, or within a territory or insular possession subject to the dominion of the United States, depositions shall be taken before an officer authorized to administer oaths by the laws of the state of Washington or of the place where the examination is held. Within a foreign country, depositions shall be taken before a secretary of an embassy or legation, consul general, vice consul or consular agent of the United States, or before a person designated by the board or agreed upon by the parties by stipulation in writing filed with the board. Except by stipulation, no deposition shall be taken before a person who is a party or the privy of a party, or a privy of any counsel of a party, or who is financially interested in the contested case.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-240, filed 8/27/84.]

WAC 296-13-250 Notice of depositions. A party that desires to take the deposition of any person upon oral examination shall give reasonable notice of not less than three days in writing to the board and all parties. The notice shall state the time and place for taking the deposition and the name and address of each person to be examined, if known. If the name is not known, the notice shall contain a general description sufficient to identify him or her or the particular class or group to which he or she belongs. On motion of a party upon whom the notice is served, the board may, for cause shown, enlarge or shorten the time. If the parties so stipulate in writing, depositions may be taken before any person, at any time or place, upon any notice, and in any manner.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-250, filed 8/27/84.]

WAC 296-13-260 Depositions and interrogatories in contested cases--Protection of parties and deponents. After notice is served for taking a deposition or of written interrogatories, upon the board's own motion or upon motion made by any party or by the deponent and upon notice and for good cause shown, the board may order that: (1) The deposition or interrogatories shall not be taken, (2) the deposition may be taken only at some designated place other than that stated in the notice, (3) the deposition may be taken only on written interrogatories, (4) the examination shall be limited to certain matters, (5) the examination shall be held with no one present except the parties to the action and their officers or counsel, (6) after being sealed, a deposition shall be opened only by order of the board, (7) business secrets or secret processes, developments, or research need not be disclosed, or (8) the parties shall simultaneously file specified documents, or information enclosed in sealed envelopes to be opened as directed by the board. The board may make any other order that justice requires to protect the party or witness from annoyance, embarrassment, or oppression. At any time during the taking of a deposition, on motion of any party or of the deponent and upon a showing that the examination is being conducted in bad faith or in a manner as unreasonably to annoy, embarrass, or oppress the deponent or party, the board may order the officer conducting the examination to cease taking the deposition, or may limit the scope and manner of the taking of the deposition as provided in subsections (1) through (8) of this section. If the order ends the examination, it shall be resumed thereafter only upon the order of the board. Upon demand of the objecting party or deponent, the taking of the deposition shall be suspended for the time necessary to move for an order.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-260, filed 8/27/84.]

WAC 296-13-270 Oral examination and cross-examination in depositions. Examination and cross-examination during oral examination shall proceed as at an oral hearing. In lieu of participating in the oral examination, a party may transmit written interrogatories to the person taking the disposition who, without previously disclosing them to any person, and after the direct testimony is complete, shall propound them seriatim to the deponent and record the answers verbatim.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-270, filed 8/27/84.]

WAC 296-13-280 Recording of depositions. The person before whom the deposition is to be taken shall put the deponent on oath and shall personally, or by someone acting under his or her direction and in his or her presence, record the testimony. Objections to the notice, the qualifications of the person taking the deposition, the manner of taking the deposition, to the evidence presented, or to the conduct of the person taking the deposition or of any party, shall be noted in the record. All objections by any party not made are waived.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-280, filed 8/27/84.]

WAC 296-13-290 Depositions in contested cases--Signing attestation and return. (1) When the testimony of a deposition is fully transcribed, the deposition shall be submitted to the deponent for examination and shall be read to or by him or her, unless the examination and reading are waived by the deponent and by the parties. Any changes in form or substance that the deponent desires to make shall be entered upon the deposition by the person taking the deposition with a statement of the reasons given by the deponent for making them. The deposition shall then be signed by the deponent, unless the parties by stipulation waive the signing or the deponent is ill or cannot be found or refuses to sign. If the deponent does not sign the deposition, the person taking the deposition shall sign it and state on the record whether the deponent did not sign because of a waiver, an illness or absence, or a refusal to sign together with the reason, if any, given for a refusal. The deposition may then be used as fully as though signed, unless on a motion to suppress, the board holds that the reasons given for the refusal to sign require rejection of the deposition in whole or in part.

(2) The person taking the deposition shall certify on the deposition that the deponent was duly sworn by him or her and that the deposition is a true record of the testimony given by the witness. He shall then securely seal the deposition in an envelope indorsed with the title of proceeding and marked "Deposition of (here insert name of witness)" and shall promptly send it by registered or certified mail to the board, for filing. The party taking the deposition shall give prompt notice of its filing to all other parties.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-290, filed 8/27/84.]

WAC 296-13-300 Use and effect of depositions. Subject to rulings by the board upon objections, a deposition taken and filed as provided in WAC 296-13-290 will not become a part of the record in the proceeding until received in evidence by the board upon its own motion or the motion of a party. Except by agreement of the parties or ruling of the board, a deposition will be received only in its entirety. A party does not make a party, or the privy of a party, or any hostile witness its witness by taking his or her deposition. A party may rebut any relevant evidence contained in a deposition whether introduced by him or her or by any other party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-300, filed 8/27/84.]

WAC 296-13-310 Fees of deponents. Deponents are entitled to the same fees as are paid for similar services in the superior courts of the state of Washington. The fees shall be paid by the party at whose instance the depositions are taken.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-310, filed 8/27/84.]

WAC 296-13-320 Submission of interrogatories. If a deposition is taken upon written interrogatories, the party offering the testimony shall consecutively number each interrogatory, file them with the board, and serve them on all parties and the person who is to answer them with a notice stating the name and address of the person who is to answer them.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-320, filed 8/27/84.]

WAC 296-13-330 Attestation and return of interrogatories. The person before whom the interrogatories are answered shall (1) certify under his or her official signature and seal that the deponent was duly sworn by him or her, that the interrogatories and answers are a true record of the deponent's testimony, and (2) promptly file the original copy of the deposition and exhibits with his or her attestation to the board, serve one copy on the counsel who submitted the interrogatories, and serve a copy on the deponent and on each other party.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-330, filed 8/27/84.]

WAC 296-13-340 Official notice--Matters of law. The board, upon request made before or during a hearing, will officially notice:

(1) **Federal law.** The Constitution; congressional acts, resolutions, records, journals, and committee reports; decisions of federal courts and administrative agencies; executive orders and proclamations; and all rules, orders, and notices published in the Federal Register;

(2) **State law.** The Constitution of the state of Washington, acts of the legislature, resolutions, records, journals, and committee reports; decisions of administrative agencies of the state of Washington, and executive orders and proclamations by the governor; and all rules, orders, and notices published in the Washington State Register.

(3) **Governmental organization.** The organization, territorial limitations, officers, departments, and general administration of the governments of the state of Washington, the United States, the several states, and foreign nations.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-340, filed 8/27/84.]

WAC 296-13-350 Official notice--Material facts. (1) In the absence of controverting evidence, the board, upon request made before or during a hearing, may officially notice:

(a) The pendency of, the issues and position of the parties in, and the disposition of any proceeding then pending before or previously concluded by the board.

(b) General customs and practices followed in the transaction of business;

(c) Facts so generally and widely known to all well-informed persons as not to be subject to reasonable dispute, or specific facts that are capable of immediate and accurate demonstration by resort to accessible sources of generally accepted authority, including facts stated in any publication authorized or permitted by law to be made by any federal or state officer, department, or agency; and

(d) Matters within the technical knowledge of the board as a body of experts, or within the scope of its statutory duties, responsibilities, or jurisdiction.

(2) At any prehearing conference, or a hearing, or argument, a party may request, or the board may suggest, that official notice be taken of a material fact, which shall be stated on the record. A party or the board may also make such a request or suggestion by written notice, or in any pleading, motion, memorandum, or brief, served upon all parties, at any time before a final decision.

(3) If an initial or final decision of the board rests in whole or in part upon official notice of a material fact, the fact shall be clearly stated in the decision. In determining whether to take official notice of material facts, the board may consult any source of pertinent information, whether or not it is admissible under the rules of evidence.

(4) A party may controvert a request or a suggestion that official notice of a material fact be taken. If a decision is stated to rest in whole or in part upon official notice of a material fact that a party has not had a prior opportunity to controvert, the party may controvert the fact by exception if the decision is a proposed decision, or by a petition for reconsideration if the decision is a final decision. The controversion shall concisely and clearly set forth the sources, authority, and other data relied upon to show the existence or nonexistence of the material fact assumed or denied in the decision.

(5) Nothing herein shall be construed to preclude the board from using its experience, technical competence, and specialized knowledge in evaluating the evidence presented to them.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-350, filed 8/27/84.]

WAC 296-13-360 Presumptions. Upon proof of the predicate facts specified in this section by clear and convincing evidence, and without substantial dispute, the board, with or without prior request or notice, may make the following presumptions, where consistent with all surrounding facts and circumstances:

(1) That a fact of a continuous nature, proved to exist at a particular time, continues to exist as of the date of the presumption, if the fact is one that usually exists for at least that period of time;

(2) That persons or objects of the same name and description are identical;

(3) That mail matter, communications, express, or freight that are properly addressed, marked, billed, and delivered as appropriate to the post office, telegraph, cable or radio company, or authorized common carrier of property, and for which with all postage, tolls, or charges are properly prepaid, is or has been delivered to the addressee or consignee in the ordinary course of business;

(4) That a fact exists or does not exist, upon proof of the existence or nonexistence of another fact that, in the

ordinary and usual course of affairs, usually and regularly coexists with the fact presumed;

(5) That a person for whom an act is done or to whom a transfer is made has, does, or will accept the act or transfer where it is clearly in his or her own self-interest so to do;

(6) That evidence, with respect to a material fact which in bad faith is destroyed, eloigned, suppressed, or withheld by a party in control of the fact, would, if produced, corroborate the evidence of the adversary party with respect to the fact.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-360, filed 8/27/84.]

WAC 296-13-370 Stipulations and admissions of record. The existence or nonexistence of a fact, as made or agreed in a stipulation or in an admission of record, will be conclusively presumed against any party bound by the stipulation or admission, and no other evidence with respect to the fact will be received upon behalf of the party.

The stipulation or admission is binding upon the parties by whom it is made and their privies, and upon all other parties to the proceeding who do not expressly deny the existence or nonexistence of the fact, upon the making thereof, if made on the record at a prehearing conference, oral hearing, or oral argument, or by a writing filed and served upon all parties within five days after a copy of the stipulation or admission has been served upon them.

A party bound by a stipulation or admission of record at any time before the final decision may be permitted to withdraw it in whole or in part by showing to the satisfaction of the hearing officer of the agency that the stipulation or admission was made inadvertently or under a bona fide mistake of fact and that its withdrawal at the time proposed will not unjustly prejudice the rights of other parties to the proceeding.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-370, filed 8/27/84.]

WAC 296-13-380 Form and content of board decisions in contested cases. (1) Every proposed and final decision and order in a contested case shall:

(a) Contain the correct names of the board and the case;

(b) Name all parties and counsel in the case;

(c) State concisely the nature and background of the case; and

(d) Contain numbered findings of fact and conclusions of law.

(2) Whenever practical, (a) the conclusions of law shall include the reasons for and precedents supporting the particular order or remedy afforded; and (b) the conclusions and order shall refer to the appropriate laws and rules.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-380, filed 8/27/84.]

WAC 296-13-390 Definition of issues before hearing. In all contested cases the issues to be adjudicated shall be made as precise as possible, in order that the board may proceed promptly to conduct the hearing on relevant and material matter only.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-390, filed 8/27/84.]

WAC 296-13-400 Prehearing conference. (1) In a contested case the board, upon its own motion or the motion of one of the parties, may direct the parties to appear at a specified time and place for a conference to consider:

(a) The settlement or simplification of issues;

(b) The necessity of amendments to the pleadings;

(c) The possibility of obtaining stipulations, or admissions of facts and of documents;

(d) The limitation of the number of expert witnesses; or

(e) Other matters that may help dispose of the proceeding.

(2) The board shall make an order that recites the action taken at a prehearing conference and the agreements made by the parties as to any of the matters considered and that limits the issues for hearing to those not disposed of by admission or agreement. The order shall control the subsequent course of the contested case unless modified for good cause by a later order.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-400, filed 8/27/84.]

WAC 296-13-410 Submission of documentary evidence in advance. Where practicable the board may require that:

(1) All documentary evidence that is to be offered during a hearing, deposition, or prehearing conference be submitted to the board and to the other parties sufficiently in advance of the taking of evidence to permit study and preparation of cross-examination and rebuttal evidence;

(2) Documentary evidence not submitted in advance, as required by subsection (1) of this section, be not received in evidence in the absence of a clear showing that the offering party had good cause for its failure to produce the evidence sooner;

(3) The authenticity of all documents submitted in advance, as required by subsection (1) of this section, be deemed admitted unless a written objection to admission is filed before the time for taking the evidence. A party will be permitted to challenge the authenticity at a later time upon a clear showing of good cause for failure to have filed a written objection.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-410, filed 8/27/84.]

WAC 296-13-420 Continuances. A party who wants a continuance shall, immediately upon receipt of notice of a hearing, prehearing conference, or deposition, or as soon thereafter as facts requiring a continuance come to his or her knowledge, notify the board of his or her desire, stating in detail the reasons why a continuance is necessary. A formal motion is not required. The

board, in ruling on a request for continuance, shall consider whether the request was timely made. For good cause shown, the board may grant a continuance and may at any time order a continuance upon its own motion. During a hearing, if it appears in the public interest or in the interest of justice that further testimony or argument should be received, the board may continue the hearing. Oral notice of a continuance, given at a hearing, shall constitute final notice of the continuance.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-420, filed 8/27/84.]

WAC 296-13-430 Rules of evidence--Admissibility criteria. Subject to the other provisions of this chapter, all relevant evidence is admissible that, in the opinion of the board, is the best evidence reasonably obtainable, having due regard for its necessity, availability, and trustworthiness. In passing upon the admissibility of evidence, the board shall consider, but need not follow, the rules of evidence governing civil proceedings in the superior court of the state of Washington.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-430, filed 8/27/84.]

WAC 296-13-440 Rules of evidence--Tentative admission--Exclusion--Discontinuance--Objections. When a party objects to the admissibility of evidence, the evidence may be received subject to a later ruling. The board may, either with or without objection, exclude inadmissible evidence or order cumulative evidence discontinued. A party that objects to the introduction of evidence shall state the precise grounds of the objection at the time the evidence is offered.

[Statutory Authority: RCW 19.28.123 and 19.28.590. 84-18-009 (Order 84-16), § 296-13-440, filed 8/27/84.]

Chapter 296-14 WAC
INDUSTRIAL INSURANCE

WAC

296-14-010	Reciprocal agreements—Industrial insurance.
296-14-100	Definition of voluntary retirement and no longer attached to the work force.
296-14-150	Definition of gainful employment for wage.
296-14-200	Waiver of recovery for worker compensation benefits overpayments.

WAC 296-14-010 Reciprocal agreements--Industrial insurance. (1) In accordance with the authority contained in RCW 51.12.120, the director of the department of labor and industries has heretofore or may hereafter enter into certain reciprocal agreements with other states and provinces of Canada and the agencies of such states or provinces which administer workers' compensation laws with respect to conflicts of jurisdiction and the assumption of jurisdiction in cases where the contract of employment arises in one state or province and the injury occurs in another.

(2) Consistent with the provisions of RCW 51.12.120 and chapter 34.04 RCW, the director of the department of labor and industries has entered into reciprocal agreements with other states and provinces which are in full force and effect on the subject matter as set forth in subsection (1) which states and provinces are:

(a) Colorado
(b) Idaho
(c) Montana
(d) North Dakota
(e) Nevada
(f) Oregon
(g) Wyoming
(h) South Dakota
(i) New Mexico

(3) The reciprocal agreements as listed above in subsection (2) are hereby promulgated and adopted as regulations of the department in accordance with the provisions of RCW 51.12.120 and such reciprocal agreements shall be kept on file in the office of the director of the department of labor and industries and available for public inspection and review during the regular business hours of such office.

[Statutory Authority: RCW 51.04.020(1). 84-06-018 (Order 84-3), § 296-14-010, filed 2/29/84; Order 74-29, § 296-14-010, filed 5/29/74, effective 7/1/74.]

WAC 296-14-100 Definition of voluntary retirement and no longer attached to the work force. (1) For the purpose of this title a claimant will be deemed to be voluntarily retired and no longer attached to the work force if all of the following conditions are met:

(a) The claimant is no longer receiving income, salary or wages from any gainful employment.

(b) The claimant has provided no evidence, if requested by the department or the self-insurer, of a bona fide attempt to return to gainful employment after retirement.

(2) Payment made by the worker or on his or her behalf in the form of premiums, for the purpose of continuation of life or medical insurance coverage, union dues or similar payments shall not constitute attachment to the work force.

(3) The claimants of new or reopened claims will not be deemed voluntarily retired if the injury or occupational disease was a proximate cause of the decision to retire and sever the attachment to the work force.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-100, filed 8/28/86.]

WAC 296-14-150 Definition of gainful employment for wage. Gainful employment for wages for the purposes of RCW 51.32.160 shall mean performing work at any regular gainful occupation for income, salary or wages.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-150, filed 8/28/86.]

WAC 296-14-200 Waiver of recovery for worker compensation benefits overpayments. Whenever the director determines whether to exercise the discretion granted by RCW 51.32.240 (1), (2) or (3) or RCW 51.32.220(6) the following shall apply:

(1) The decision of the director shall apply to the state fund or to the self-insurer, as the case may be.

(2) In the case of recoupment of an overpayment from any future payments, the director will entertain a request to exercise his or her discretion to waive recovery up to sixty days after communication of the order and/or notice to the recipient that benefits are being withheld to satisfy the previous overpayment.

(3) A finding by the director that recovery of an overpayment would be against equity and good conscience shall be required before the overpayment can be waived in whole or in part. The director shall consider the following factors and any other factors relevant to the particular case:

(a) Whether the claimant was without fault in applying for and accepting benefits which gave rise to the overpayment;

(b) Whether recovery of the overpayment, in whole or in part, would defeat the purposes of Title 51 RCW;

(c) Whether the claimant reasonably relied upon the benefits, or notice that such benefits would be paid and relinquished a valuable right or changed his or her position for the worse;

(d) Whether the claimant reasonably relied upon misinformation from an official source (i.e., a representative of the department or self-insurer, as the case may be) in accepting the benefit payment which gave rise to the overpayment.

(4) The claimant's application for waiver of an overpayment contemplated under RCW 51.32.240 (1), (2), or (3), or 51.32.220(6) shall clearly set forth the reason(s) that he or she believes that recovery of the overpayment in whole or in part, as the case may be, is against equity and good conscience.

[Statutory Authority: RCW 51.32.060, 51.32.090, 51.32.160, 51.21.220(6) [51.32.220(6)] and 51.32.240 (1), (2) or (3). 86-18-036 (Order 86-33), § 296-14-200, filed 8/28/86.]

Chapter 296-15 WAC
WORKERS' COMPENSATION SELF-INSURANCE RULES AND REGULATIONS

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-15-040 Payment of deficit. [Order 77-19, § 296-15-040, filed 9/26/77; Order 73-24, § 296-15-040, filed 11/23/73; Order 71-15, § 296-15-040, filed 12/1/71.] Repealed by 81-10-052 (Order 81-8), filed 5/1/81. Statutory Authority: RCW 51.04.020(1) and 51.14.020(4).

296-15-044 Payment of deficit. [Statutory Authority: RCW 51.04.020(1) and 51.14.020(4). 81-10-052 (Order 81-8), § 296-15-044, filed 5/1/81, effective 6/1/81.] Repealed by 83-07-075 (Order 83-9), filed 3/23/83. Statutory Authority: RCW 51.14.020(1).

296-15-21001 Form—SIF #3—Self-insured employer's notice of acceptance of claim. [Order 71-15, Form SIF #3 (codified as WAC 296-15-21001), filed 12/1/71.] Repealed by 84-06-031 (Order 83-38), filed 3/1/84, effective 4/1/84. Statutory Authority: RCW 51.04.020(1).

296-15-21003 Form—SIF #5—Supplemental or final report on occupational injury or disease. [Order 71-15, Form SIF #5 (codified as WAC 296-15-21003), filed 12/1/71.] Repealed by 86-18-037 (Order 86-35), filed 8/28/86. Statutory Authority: RCW 51.04.020.

WAC 296-15-010 Preamble and authority. These rules and regulations governing workers' compensation self-insurance plans were adopted by the director of the department of labor and industries in accordance with sections 27, 47, and 59, chapter 289, Laws of 1971 1st ex. sess., and chapter 51.14 RCW. These rules and regulations were adopted to implement and make specific those sections of chapter 289, Laws of 1971 1st ex. sess., relating to workers' compensation self-insurance.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-010, filed 7/1/86; Order 71-15, § 296-15-010, filed 12/1/71.]

WAC 296-15-020 Application. (1) The application for certification to self-insure will be made only by those firms who have been in business for a minimum of 3 years, on a form prescribed by the department which

will elicit necessary information as to an employer's qualifications for self–insurance.

(2) The application shall be supplied by the department to an employer upon the employer's request. It shall be completely and accurately filled out by the employer, and forwarded, with all necessary supporting documents, to the director.

(3) The director shall consider all matters relating to the applicant's qualifications to perform as a self–insurer, and shall advise the employer of the action taken on the application within a reasonable period of time and in no instance less than 21 calendar days before the requested certification date. If deemed necessary for obtaining further information, the director may extend the time for acting on the application. If certification is denied due to lack of evidence of a safety program, the firm shall be denied reconsideration for one full quarter. The firm may then request certification during the second quarter after denial.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–020, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83–24–027 (Order 83–22), § 296–15–020, filed 12/1/83, effective 1/1/84; Order 77–19, § 296–15–020, filed 9/26/77; Order 71–15, § 296–15–020, filed 12/1/71.]

WAC 296–15–022 Corporate guarantee. If the applicant employer is a subsidiary, the parent firm will furnish the department with its guarantee to assume and be responsible for the workers' compensation liabilities of the subsidiary in the event the subsidiary firm is unable or unwilling to cover these liabilities. This guarantee also applies to self–insured accounts that are purchased or acquired by another firm and remain in the self–insured program. This guarantee is to be on a form prescribed by the department.

[Statutory Authority: RCW 51.04.020(1). 83–24–027 (Order 83–22), § 296–15–022, filed 12/1/83, effective 1/1/84.]

WAC 296–15–023 Entities included in certification. (1) The certification of a firm will include all of its subsidiaries or divisions doing business in the state of Washington. A subsidiary is defined, for the purpose of this rule, as an entity which is more than 50% owned by another single firm.

(2) One certificate will be issued to an approved self–insurer, including all subsidiaries or divisions. The entities will be considered as one employer for all purposes of Title 51 RCW.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–023, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83–24–027 (Order 83–22), § 296–15–023, filed 12/1/83, effective 1/1/84.]

WAC 296–15–025 Joint venture. (1) An application for certification to self–insure will be made on a form prescribed by the department which will set forth the necessary information regarding the qualifications of the joint venture to self–insure.

(2) The application form, (SIF 1–A), will be supplied by the department upon written request. It will be completed by the applicant and submitted to the department with all supporting documents attached.

(3) Applications will be acted upon within fourteen calendar days of receipt, provided, that if deemed necessary for obtaining additional information, the director may extend the time for acting on the application. Processing the application will include an evaluation of the financial condition of all parties with interest greater than twenty percent in the assets and profits of the joint venture and an evaluation of the written safety program to be in effect at all job sites of the joint venture.

(4) Certification will be effective on the first day of a calendar month following receipt of surety and all required documentation. The director will consider the qualifications of the applicant and will advise the applicant of the action taken.

(5) Applicant joint ventures must include a sponsoring party. The word "sponsor" defines an employer presently self–insured in the state of Washington, with a majority interest in the assets and profits of the joint venture. The sponsor shall be responsible for the management of all industrial insurance claims, and shall accept full responsibility for all compensation due claimants. In the event of insolvency, bankruptcy, or dissolution of a party to the joint venture or the joint venture itself, the sponsoring party shall be held primarily responsible for all workers' compensation benefits due, with all parties to the joint venture being held jointly and severally responsible for payment of all compensations and assessments which may become due until all obligations are released by the department. At the discretion of the director and by written request from the sponsoring party, the department may release a minority party from its obligations one year after fulfillment of the construction contract and a final settlement of the joint venture account has been made.

(6) The agreement under which the joint venture will perform shall be attached to the application form. The joint venture agreement shall contain a description of the obligations and responsibilities of each party for the industrial insurance program of the joint venture. The sponsor shall accept full responsibility for the management and payment for all incurred claims during the life of and after dissolution of the joint venture.

(7) Surety will be required in an amount deemed by the department to insure sufficient financial ability to make certain the prompt payment of all compensation under this title and all assessments which may become due, but not less than the employer's normal expected annual claim liabilities. The surety bond or escrow account will name the joint venture and all the parties thereof as principal. WAC 296–15–030 shall govern the posting of surety by the joint venture.

(8) The joint venture shall be subject to all regulations, reports, and assessments set forth in Title 51 RCW and accompanying WAC rules.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–025, filed 7/1/86; 82–07–019 (Order 82–8), § 296–15–025, filed 3/10/82.]

WAC 296–15–026 Group self–insurance application. (1) An application from qualified employers for group self–insured workers' compensation coverage shall be

made to the department on a form prescribed by the department and shall contain answers to all questions. Answers shall be given under oath.

(2) The application, as submitted by the initial board of trustees of the self-insurers' trust fund, shall have the following attached:

(a) A copy of the bylaws of the proposed group self-insurers' trust fund.

(b) Individual applications of each employer applying for coverage in the trust fund.

(c) A current financial statement of each member of the group and a financial statement collectively reflecting the financial condition of prospective members of the trust fund in compliance with WAC 296-15-02602(2).

(d) A listing of the estimated standard premium to be developed for each member individually and in a total as a group.

(e) The group shall engage a department-approved administrator or enter into a contract with an approved service company. A copy of the signed agreement with the service company shall be submitted with the application.

(f) Designation of the initial board of trustees and administrator.

(g) An indemnity agreement jointly and severally binding the trust fund and each member thereof to comply with the provisions of the Industrial Insurance Act. The indemnity agreement shall be in a form that has been approved by the department.

(h) A detailed budget of all projected administrative expenses for the fund year.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-026, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-026, filed 12/17/82.]

WAC 296-15-02601 Group self-insurers admission of new members, termination of individual members. (1) After the inception date of the trust fund, prospective new members of the trust fund shall submit an application for membership to the board of trustees, or its administrator, on a form provided by the department. The trustees or administrator may approve the application for membership pursuant to the bylaws of the group self-insurers' trust fund. The application for membership shall then be filed with the department. Membership shall take effect the first day of the calendar quarter after reporting the approval to the department.

(2) Individual members may elect to terminate their participation in a group self-insurer's program or be subject to cancellation by the group trust fund pursuant to the bylaws of the group. Such termination or cancellation shall be effective at the end of the calendar quarter during which it was reported to the department.

(3) Contributions to the trust fund for purposes of meeting the requirements of WAC 296-15-02605 shall be paid under a schedule of dates and amounts specified by the group's board of trustees, subject to the following requirement: At no time during any coverage period shall the amount collected by the trust fund to apply to costs and/or reserves for that coverage period be less than the result obtained by multiplying the fraction of the coverage period which has elapsed by the total contribution expected to be necessary to satisfy requirements of WAC 296-15-02605 for the entire coverage period.

[Statutory Authority: RCW 51.04.020(1). 84-06-031 (Order 83-38), § 296-15-02601, filed 3/1/84, effective 4/1/84; 83-24-027 (Order 83-22), § 296-15-02601, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02601, filed 12/17/82.]

WAC 296-15-02602 Group self-insurance reports. Reports as to financial standing, payroll records, coverage, accident experience, compensation payments, and such other reports as are required to be filed with the department shall be made at the following times and in the following manner:

(1) Summary loss data shall be maintained by the trust fund and shall be available to the department when requested.

(2) Each trust fund shall, not later than July of each year, comply with WAC 296-15-080 with respect to the financial condition of the trust.

(3) Quarterly reports shall be filed with the department within sixty days from the end of a calendar quarter. A listing of any and all delinquent accounts as defined by the bylaws shall be attached as a part of this report.

(4) A certified copy of the minutes of all trustees meetings shall be retained by the trust fund administrator. The minutes shall be made available to the department upon request.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02602, filed 12/17/82.]

WAC 296-15-02603 Group self-insurance trustee responsibilities. (1) To ensure the financial stability of the operations of each group self-insurers' trust fund, the board of trustees shall be responsible for all operations of the trust fund. Trustees shall be a group of members elected by members of a self-insurers' trust fund for stated terms of office to direct the administration of a self-insurers' trust fund. The duties of the trustees include the responsibility of approving applications for new members of the fund. The trustees shall be chosen from members of the self-insurers' group, but a trustee shall not be an owner or any employee of a company under contractual obligation to the fund or officer or employee of a service organization independent of the employer as defined in WAC 296-15-110. The board of trustees of each trust fund shall take all necessary precautions to safeguard the assets of the trust fund, including but not limited to all of the following:

(a) Designate a fiscal agent and/or administrator to administer the financial affairs of the trust fund in accordance with Title 51 RCWs, appropriate WACs and/or RCWs pertaining to the conduct of the group self-insured trust regarding investments of funds and budget and accounting procedures as applicable. The fiscal agent or administrator shall furnish a fidelity bond with the trust fund in an amount sufficient to protect the trust fund against the misappropriation or misuse of any

moneys or securities. Evidence of such bond shall be filed with the department. The bond is one of the conditions required for approval of the establishment and continued operation of a group self-insurers' trust fund. Such fiscal agent or administrator shall not be an owner, officer, or employee of a service organization independent of the employer as defined in WAC 296-15-110.

(b) Manage deposits to and disbursements from the trust fund in accordance with WAC 296-15-02605.

(c) Audit the accounts and records of the trust fund annually or at any time required by the department. Copies of audits shall be filed with the department within six months after the close of the trust fund year.

(d) The trustees shall not extend credit to individual members for payment of premium.

(e) The board of trustees or its fiscal agent or administrator shall not utilize any moneys collected as premiums for any purpose unrelated to workers' compensation. Further, it shall not borrow any moneys from the fund or in the name of the fund without advising the department of the nature and purpose of the loan and obtaining prior department approval.

(2) The board of trustees may delegate authority for specific functions to the administrator of the group self-insurers' trust fund. The functions that may be delegated include but are not limited to such matters as contracting with a service organization agent, determining the premium charged to, and refunds payable to, members subject to the restrictions of the department for investing surplus moneys set forth in subsection (1)(e) of this section, and approving applications for membership. All delegated authority shall be specifically defined in the written minutes of the trustees' meetings.

(3) Prior to certification date excess workers' compensation coverage shall be purchased providing adequate protection against catastrophic or unexpected loss. Adequate coverage shall be maintained throughout the period of group self-insurance.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-02603, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02603, filed 12/17/82.]

WAC 296-15-02604 Group self-insurance funds--Surplus distribution--Deficit. (1) Any surplus moneys for a fund year in excess of the amount necessary to fulfill all obligations under the act, including maintenance of reserves specified in WAC 296-15-02605 may be declared refundable by the trustees, and the amount of the declaration shall become a liability of the fund at the time of the declaration.

(2) In the event of a deficit in any fund year, the deficit shall be made up from any of the following:

(a) Unencumbered surplus from a fund year other than the current fund year, after approval by the department.

(b) By assessment of the membership of the deficit fund year if ordered by the department.

(c) By such alternative method as the department may approve.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02604, filed 12/17/82.]

WAC 296-15-02605 Reserves. (1) The group shall maintain adequate reserves to cover claim liabilities and the overhead expense of paying claims liabilities. It shall also maintain a reserve to pay the department administrative assessment which would apply to outstanding claim costs if the group were to be discontinued. Additionally, the group shall maintain a contingency reserve equal to fifteen percent of the claim liabilities, or twenty-five percent of annual premium volume, whichever is greater, as a safeguard against adverse development of costs. Reserves may be discounted for anticipated investment income. Notwithstanding the reserves otherwise calculated under this section, the maximum reserve for any particular coverage period for which the group has purchased an aggregate excess reinsurance policy from a reinsurer shall be the difference between the group's retention under the policy and the amount which it has already paid for claim costs for the particular coverage period plus expense items not recoverable from the reinsurer: *Provided*, That the reinsurer is authorized by the insurance commissioner to transact such business in the state of Washington. Any coverage period, or periods, for which the difference between aggregate excess retention and amounts already paid for claim costs is carried as a reserve shall not be subject to the additional requirement of maintaining a contingency reserve.

(2) Reserve requirements for group self-insurance may not be satisfied in whole or in part by posting of a surety bond or bonds. Minimum required reserves for claim liabilities are described below. The group may set aside higher reserves if it perceives a greater liability than calculated under the following methods:

(a) **Reserve Method I**

This method shall apply until the group has passed the runoff test described under Method II or until five years after the group has submitted its first annual report covering at least one full year of operation, whichever comes first. Under Method I, the groups' reserves other than the contingency reserves, shall be based on the accident and medical aid fund premiums which it would have paid had it been insured with the state fund. Such premiums shall be determined each year by multiplying the hours of employment in each risk classification by the base rates for each risk classification, and by the group's composite experience modification. The group's composite experience modification shall be based on combined state fund experience of its members and shall be calculated using the formulas and procedures specified in WAC 296-17-850 through 296-17-870. If the group becomes ineligible for an experience modification under WAC 296-17-850(1) by virtue of having insufficient state fund experience, it shall retain its last previous experience modification for the balance of time during which Reserve Method I is in use. Chapter 296-17 WAC shall govern the computation of hours and the assignment of risk classification.

This group shall deposit such premiums in a reserve account. Payments or withdrawals therefrom may be made only for the following conditions:

(i) Payment of administrative expenses of operating the group self-insurance program including claims handling expenses, legal costs and department administrative assessments.

(ii) Payment of claim costs other than supplemental pension fund claim payments. Supplemental pension fund benefits may be paid from the reserve account, provided that reimbursement for such payments is claimed under provisions of WAC 296-15-210, and provided that such reimbursement is deposited in the reserve account when received. Any interest earned by the reserve account must remain in the account during the period in which this method is in effect.

(iii) The group may pay its reinsurance premium from the reserve account, provided the reinsurer is authorized by the insurance commissioner to transact reinsurance in the state of Washington and provided the group retains amounts recovered from the reinsurer in the reserve account. Within eighteen months after the end of the coverage period, the group shall return the reinsurance premium, less any recoveries already received, into the reserve account. Thereafter it may include amounts which it reasonably expects to recover from the reinsurer, based on case estimates, as an asset. Such assets may be used for satisfying reserve requirements, provided the group retains amounts recovered from the reinsurer in the reserve account.

(b) **Reserve Method II**

The group shall report its claim payments and its estimated claim liabilities annually. For the purpose of applying Methods II and III, the group's estimate of its claim liabilities shall be based on its own reckoning regardless of the amount of reserves actually required by department regulations. The department will perform a runoff test of the adequacy of the group's estimate of liabilities by tracking the subsequent costs of claims (subsequent payments plus the group's updated estimates of remaining liabilities). If the subsequent costs over a three year development period following the effective date of an annual report covering at least one full year of operation do not exceed original liability estimates by more than fifteen percent, then the group's estimation of claim liabilities will be considered adequate and required reserves will thenceforth be based on the group's own estimates until such time in the future as the runoff test may demonstrate an inadequacy in reserving methodology.

(c) **Reserve Method III**

This method shall apply if the group fails the runoff test described in Method II, provided at least five years has elapsed since the group filed its first annual report covering at least one full year of operation. Under Method III the department shall determine the extent to which past liability estimates of the group have been inadequate as determined by the runoff test. The department shall apply a correction factor to the group's current estimates of its liabilities to compensate for anticipated repetition of inadequate estimates.

Methods II and III presume a consistency in reserving methodology by the group. If the department determines that the group has changed its reserving methodology in such a way as to invalidate Method II or III, then it shall make such adjustment to the procedure as may be appropriate under the circumstances. The group may devise its own method for calculating individual member's premiums under Reserve Methods I, II and III, provided the total premiums are sufficient to set up the required reserves.

[Statutory Authority: RCW 51.14.150 and 51.14.160. 83-01-076 (Order 82-43), § 296-15-02605, filed 12/17/82.]

WAC 296-15-030 Posting of security. Subsections (1), (2), (3), and (4) of this section shall apply only to individual self-insurers who are not participating in a group self-insurance program. Group self-insurance programs are subject to reserve requirements set forth in WAC 296-15-02601(3) and 296-15-02605, in lieu of application of this section.

(1) Upon receiving a completed application for certification to self-insure, the director shall review the matter and notify the employer of the amount of security which must be deposited to secure the payment of compensation and assessments, pursuant to RCW 51.14.020 as now or hereafter amended. This amount as so established may be satisfied by the employer's supplying of money, corporate or governmental securities approved by the director, or a surety bond, written by a company admitted to transact surety business in this state, in favor of the department. All such securities of a self-insurer shall be deposited with an escrow agent appointed by the director and administered pursuant to a written agreement between the department, the self-insurer and the escrow agent. Securities shall be registered in the name of the escrow agent on behalf of the self-insurer. The original of all surety bonds submitted by self-insurers following approval by the director and the attorney general will be kept on file in the department.

(2) On or after July 1, 1985, the minimum amount of security required for initial certification as a self-insurer shall be the projected average cost of a permanent total pension claim for an injury occurring during the first year after the employer's self-insuring, including medical, time-loss and any other miscellaneous claim costs paid prior to award of the pension. This average cost shall be calculated by the department on an annual basis.

The security required for initial certification as a self-insurer on or after July 1, 1985, may be greater than the minimum amount described above. In establishing such security requirements, the department shall estimate the following amounts:

(a) The estimated amount of accident and medical aid fund premium that the self-insurer would have paid to the state fund during the first year of self-insurance, if it had remained in the state fund.

(b) The estimated amount of incurred benefits for the first year of self-insurance, based on past experience with the state fund, adjusted for intervening changes in benefit schedules and exposure.

If either or both of the above amounts exceed the minimum security deposit described in this section, the department may require the larger of (a) or (b) of this subsection as a security deposit for initial certification as a self–insurer on or after July 1, 1985.

The security required in accordance with the above procedures may be adjusted by the department if there are other known conditions which may alter the self–insurer's potential claim costs and/or its ability to pay them.

(3) The amount of security required of each self–insurer shall be reviewed periodically by the director to determine if there is need for any increase or decrease thereof. To facilitate this review a self–insurer's annual report (SIF #7) shall be required in the form prescribed by the director and supplied to all self–insurers.

Security requirements in effect on, or initially established after, July 1, 1985, shall not be increased unless and until one or more of the following conditions are met:

(a) An estimate of the self–insurer's outstanding claim liabilities, made by either the self–insured employer or the department, exceeds the amount of security in force; or

(b) The projected average cost of a permanent total pension claim for an injury in the current year, including medical, time–loss and any other miscellaneous claim costs paid prior to award of the pension, exceeds the security in force for the employer by one hundred thousand dollars or more.

(4) The following procedure shall apply for purposes of updating security requirements:

(a) On July 1, 1985, the security requirement for each self–insurer shall be the larger of the following two amounts:

(i) The existing security in force for the self–insurer; or

(ii) The self–insurer's stated estimate of outstanding claim liabilities as shown on the 1984 self–insurer's annual report (SIF #7).

(b) On July 1, 1986, the security requirement for each self–insurer shall be the larger of the following amounts:

(i) The existing security in force for the self–insurer; or

(ii) The average of the self–insurer's stated estimate of outstanding claim liabilities as shown on the 1985 self–insurer's annual report (SIF #7) and the department's estimate of the self–insurer's outstanding claim liabilities as of December 31, 1985, made in accordance with provisions of (e) of this subsection; or

(iii) The minimum security requirement.

(c) On July 1, 1987, the security requirement for each self–insurer shall be the larger of the following amounts:

(i) The existing security in force for the self–insurer; or

(ii) The department's estimate of the self–insurer's outstanding claim liabilities as of December 31, 1986, made in accordance with provisions of (e) of this subsection; or

(iii) The minimum security requirement.

(d) After July 1, 1987, the security requirement for each self–insurer will be subject to review and increased or decreased at such times as the director deems necessary to maintain the adequacy of those requirements. Such review and adjustment, when made, shall be performed in accordance with provisions of (e) of this subsection.

(e) In establishing or adjusting security requirements for a self–insurer, the department may perform a runoff test of the adequacy of the employer's estimates of liabilities, by tracking the subsequent cost of claims (subsequent payments plus the employer's updated estimates of remaining liabilities). If the subsequent costs do not exceed original liability estimates, the employer's most recent estimates of claim liabilities shall be considered adequate for purposes of setting current security requirements for the employer.

If the runoff test shows that subsequent costs of claims exceed the employer's original estimates of outstanding liabilities, the department may apply a loss development factor to the employer's most recent estimates of claim liabilities to compensate for anticipated repetition of inadequate estimates. The loss development factor shall be based on the self–insured employer's experience.

The following special considerations shall apply in establishing or adjusting security requirements for a self–insurer:

(i) Pension claims – Reserve amounts attributable to death or permanent total disability claims independently secured by means of a surety bond or assignment of account, and which are included in estimates of outstanding claim liabilities as shown on the self–insurer's annual report (SIF #7), shall be deducted from estimates of outstanding claim liabilities made in accordance with other provisions of this section.

(ii) Reinsurance – Anticipated recoveries under reinsurance policies held by a self–insurer must be documented by the self–insurer and reported to the department to qualify for consideration in establishing security requirements. Such anticipated recoveries shall be applied to either the self–insurer's estimate of outstanding claim liabilities as shown on the most current self–insurer's annual report (SIF #7) or the department's estimate of the self–insurer's outstanding liabilities made in accordance with (e) of this subsection, whichever is greater. If the resulting estimate of claim liabilities net of reinsurance recoveries is less than the security requirements imposed by this section without adjustment for reinsurance, the security requirement shall be reduced accordingly; provided, that security requirements imposed upon initial certification of a self–insurer or based upon the projected average cost of a permanent total pension claim may be retained by the department regardless of other estimates of claim liabilities for the self–insurer.

(iii) Strict application of loss development factors based upon the runoff test presumes a consistency of reserving methodology and results for the self–insurer. If the department determines that an employer has changed its reserving methodology in such a way as to

invalidate loss development factors based upon past experience, then the department shall make such adjustments to the procedure as it may deem appropriate under the circumstances.

(iv) The department will give full consideration to any evaluation of the self–insured employer's outstanding claim liabilities made by an independent qualified actuary. Such independent actuarial evaluations are optional and not required by this rule.

(f) Any changes to existing bonds and/or adjustments to bond amounts made by or required of a self–insurer on or after July 1, 1985, shall provide adequate security for all self–insured workers' compensation liabilities of the employer, regardless of when the claims giving rise to those liabilities were incurred. Changes contemplated by this subsection include, but are not limited to, designation of a new surety carrier, issuance of a replacement bond by a current surety carrier, and/or revision of the face amount of any bond whether by endorsement or issuance of a replacement bond. If a new surety carrier does not assume full responsibility for all past self–insured liabilities regardless of when incurred, the department may require that such liabilities be secured by other means.

(5) A self–insurer's annual report (SIF #7) shall be required of group self–insurance plans, in the form prescribed by the director and supplied to all group self–insurance plans.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–030, filed 7/1/86; 85–06–031 (Order 85–6), § 296–15–030, filed 3/1/85; Order 77–19, § 296–15–030, filed 9/26/77; Order 72–4, § 296–15–030, filed 4/25/72; Order 71–15, § 296–15–030, filed 12/1/71.]

WAC 296–15–045 Payment of deficit. In determining a self–insurer's proper share of any deficit which must be paid to the department, pursuant to section 27(4), chapter 289, Laws of 1971 ex. sess., RCW 51.14.020(4), the following procedures shall apply.

(1) STATE FUND DEFICIT. The state fund deficit shall be the excess of liabilities over assets as shown on the state fund balance sheet for the last date of state fund coverage of the self–insurer. If assets exceed liabilities, the deficit shall be zero. If the last date of state fund coverage is other than March 31, June 30, September 30 or December 31, the state fund deficit shall be obtained by performing linear interpolation between the asset figures and between the liability figures on the two balance sheets spanning the date of last coverage, and then computing the excess of interpolated liabilities over interpolated assets. The state fund deficit shall be based on the combined status of the accident and medical aid funds, and that portion of the pension reserve fund which applies to state fund claims.

(2) PREMIUM. The premium used for calculating deficit assessments shall be the combined accident and medical aid fund premiums due for the one year coverage period ending March 31, June 30, September 30 or December 31, whichever date most immediately precedes the effective date of self–insurance.

(3) DEFICIT ASSESSMENT FORMULA. The self–insurer's deficit assessment shall be determined by multiplying the state fund deficit, if any, by a "deficit share factor", said factor to be the ratio of the self–insurer's premium to total state fund premium for the one year coverage period specified in paragraph (2), above. Members of a group self–insurance program shall be treated as individual employers for the purpose of determining their deficit assessments.

(4) INITIAL DEFICIT ASSESSMENT ESTIMATE. Prior to the effective date of self–insurance, the department shall make its best estimate of the prospective self–insurer's deficit assessment, and the prospective self–insurer shall be required to pay the estimated amount prior to being issued a certificate of self–insurance.

(5) SUBSEQUENT ADJUSTMENT OF DEFICIT ASSESSMENTS. As soon as the actual data specified under the deficit assessment formula becomes available the deficit assessment shall be recalculated based on the actual data, and the self–insurer shall either receive a refund or be required to pay an additional amount, depending on the results of the calculation. The department shall make no further adjustment of the deficit assessment, except when an employer's premium is changed as the result of an audit or through discovery of a clerical error in calculation of the firm's premium. In such cases, the self–insurer's "deficit share factor" shall be recalculated based on the revised premium. Deficit share factors shall not be recalculated because of premium adjustments made under the retrospective rating plan. Payment of a deficit assessment based upon the recalculation using actual data as specified in this rule shall be a requirement for retaining a certificate of self–insurance.

(6) EFFECTIVE DATE. This rule shall become effective on July 1, 1983 and shall apply to all firms self–insuring on or after that date.

[Statutory Authority: RCW 51.14.020(1). 83–07–075 (Order 83–9), § 296–15–045, filed 3/23/83.]

WAC 296–15–050 Reinsurance. (1) A self–insurer who desires to reinsure a portion of his liability, pursuant to RCW 51.14.020(5) as now or hereafter amended, shall notify the department of the name of the insurance carrier which will carry such reinsurance policy, and full details as to the extent and period of coverage of such policy. The director may periodically require information from all self–insurers as to their reinsurance program, if any, in order to determine that there is continued compliance with RCW 51.14.020(5).

(2) All copies of any insurance policy in force shall be submitted to the department, together with any modification or renewal provisions thereto which the employer has acquired for the purposes authorized in RCW 51.14.020(5) of reinsuring a portion of the employer's liability: *Provided*, That the supervisor upon request and for good cause may accept a certificate of insurance in lieu of the self–insured employer's policy of reinsurance which certifies to the monetary limits, all conditions and exceptions pertaining to payments under the self–insured employer's policy of reinsurance and in addition contains a certification that the company providing reinsurance and its personnel do not participate in the administration of the responsibilities of the self–insurer under Title 51

RCW and that such policy of reinsurance does not provide for payments in excess of eighty percent of the self–insured employer's liabilities under the provisions of Title 51 RCW.

(3) Each such policy of insurance issued or renewed on or after July 1, 1975 shall contain a provision which in substance states: That such policy is not intended to provide for the payment of any of the costs, benefits or compensation which the self–insured employer may be obligated to pay pursuant to the provisions of Title 51 RCW, in excess of eighty percent of any such liabilities as required by RCW 51.14.020(5).

[Statutory Authority: RCW 51.04.020. 85–06–031 (Order 85–6), § 296–15–050, filed 3/1/85; Order 77–19, § 296–15–050, filed 9/26/77; Order 71–15, § 296–15–050, filed 12/1/71.]

WAC 296–15–060 Administrative cost assessment. (1) Assessments levied by the department against each self–insurer shall be based on the self–insured employer's proportionate share of the administrative costs determined to be attributable to self–insurers, including expenses of the safety division, the industrial insurance division, the University of Washington environmental research facility, the board of industrial insurance appeals, appeals expenses and other general administrative expenses.

(2) The director shall determine the assessment rate on a fiscal year basis prescribing the self–insured employer's share of the attributable costs determined pursuant to the provisions of subsection (1). For employers who have been covered under the Workers' Compensation Act for a period of less than two full calendar years, the assessment rate shall be a percentage of the premium which would have been collected at manual rates had the self–insurer been covered by the state fund. For employers who have been subject to the provisions of the Workers' Compensation Act in excess of two calendar years, the administrative assessment rate shall be a percentage of the payments made on all claims involving the self–insured employer: *Provided*, That in any event a self–insured employer shall be subject to the payment of a minimum quarterly assessment of twenty–five dollars.

(3) Administrative cost assessments shall be payable for each quarter, by the thirtieth day following the receipt of a quarterly report form supplied by the department (SIF #6). This quarterly report form shall also provide for payment of the supplemental pension fund assessment.

(4) A self–insured employer who has, or shall hereafter, voluntarily, or involuntarily, surrender his certification as a self–insurer shall pay an adjusted administrative assessment. The amount of this adjusted administrative assessment will be determined annually and shall represent such self–insurer's portion of the administrative assessment which can be attributed directly to the operational costs of the self–insurance section. This adjusted administrative assessment shall continue until such time as all liabilities and all responsibilities of such employer have been terminated. The amount of this adjusted administrative assessment shall in no case be less than $25.00 per calendar quarter.

When such an employer has had no self–insured claim activity, excluding activity in cases of total permanent disability or death, for a period of one year, a request may be made to the department for a review to determine if there is a need to continue the adjusted administrative assessment, in which circumstances, the minimum assessment will not apply.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–060, filed 7/1/86; Order 77–19, § 296–15–060, filed 9/26/77; Order 75–28, § 296–15–060, filed 8/29/75, effective 1/1/76; Order 74–38, § 296–15–060, filed 11/18/74, effective 1/1/75; Order 73–24, § 296–15–060, filed 11/23/73; Order 71–15, § 296–15–060, filed 12/1/71.]

WAC 296–15–065 Self–insurers' insolvency trust. (1) For the purpose of interpretation of this section, the term "insolvent self–insurer" means a self–insurer who has defaulted upon any obligation under Title 51 RCW, and with respect to which default the director has taken action authorized by RCW 51.14.060.

(2) A self–insurance insolvency fund shall be established in the office of the state treasurer. The purpose of this fund shall be to pay, to the injured workers of insolvent self–insured employers under Title 51 RCW, any unsecured benefits to which such injured workers had become entitled, and to pay for the department's associated administrative costs, including attorneys' fees.

(3) This fund shall be financed by assessment, as follows: (a) Assessments shall be levied on a post–insolvency basis against all self–insurers, including any of which have surrendered certification at any time during the thirty–six months prior to the close of a quarter for which assessments to the insolvency fund are payable: *Provided, however*, That school districts, cities and counties are exempt from assessment(s) to finance such self–insurers' insolvency fund: *Provided, further*, That school districts, cities and counties shall not have their obligations discharged, in full or in part, with moneys from said self–insurers' insolvency fund; (b) each assessment shall be a percentage of the payments made on all claims involving the self–insured employer; (c) assessments shall be levied on a quarterly basis as prescribed by the board of trustees established in this section; (d) assessments shall be payable each quarter, by the thirtieth day following the notice of assessment.

(4) The administration of an insolvent self–insurer's claims shall be the responsibility of the department until the security deposit as required by RCW 51.14.020 and/or the recovery from any court action concerning the self–insurer's workers' compensation liabilities have been exhausted.

(5) Establishing self–insurance insolvency fund assessment rates and administering the claims of insolvent self–insurers upon depletion of remedies for reimbursement of workers' compensation expenditures made by the department as specified under subsection (4) of this section shall be the responsibility of a five–member board of trustees, under the general supervision of the department's self–insurance section.

(6) Assessments for the self–insurers' insolvency fund shall be in amounts deemed adequate to reimburse the accident, medical aid and/or pension reserve funds for

benefits paid from these funds to injured workers of insolvent self-insurers, and for associated administrative costs, including attorneys' fees. Any and all interest earned on assessments levied and collected by the board of trustees shall become a part of the self-insurers' insolvency fund, and be distributed only for the purposes for which the fund was established.

(7) The board of trustees shall be comprised of the director or the director's designee, three representatives of self-insured employers, and one representative of workers. Initially and thereafter, the director shall appoint the self-insurer representatives from a list of names submitted by state-wide organizations of self-insurers and others. Initially and thereafter, the director shall appoint the worker representative from a list of names submitted by an organization, state-wide in scope, which through its affiliates embraces a cross section and a majority of the organized labor of the state. Initial appointments shall be made within thirty days of the effective date of this section. Two of the initial appointees shall serve three-year terms, and two shall serve two-year terms. Thereafter, appointed representatives shall serve two-year terms: *Provided*, That no representative shall serve more than two consecutive terms. Each representative on the board of trustees shall have one vote.

(8) No later than March 31 of each year, the board of trustees shall report in writing to the workers' compensation advisory committee regarding the status of the insolvency fund as of the previous December 31, and summarize any events or transactions of interest or importance to the ongoing operation of the insolvency fund.

[Statutory Authority: RCW 51.04.020. 86-24-014 (Order 86-40), § 296-15-065, filed 11/24/86.]

WAC 296-15-070 Accident reports and claims procedures. (1) Reporting of accidents shall be on a form prescribed by the department, entitled the self-insurer's accident report (SIF #2), which will be supplied to all self-insurers, and by self-insurers to their employees. Forwarding a completed copy of this form to the department for compensable claims immediately and medical only claims monthly after closing by the self-insured employer shall satisfy the initial accident reporting responsibility and statistical reporting responsibility under the law.

(2) A self-insurer, on denying any claim, shall provide to the claimant, the department, and the attending physician, within thirty days after such self-insurer has notice of the claim, a notice of denial of claim, substantially similar to the example SIF #4. With every such claim denial a self-insurer shall send to the department all information on which the denial was based.

(3) A self-insurer shall file a complete and accurate supplemental or final report on injury or occupational disease claims resulting in time loss payments, on a form substantially similar to labor and industries Form No. F207-005-000, self-insurer's report of occupational injury or disease, 7-86 (SIF-5) at the following times:

(a) Within five working days following the date the first time loss compensation is paid.

(b) Within five working days following the date the time loss compensation is terminated, reinstated, or the rate thereof changed.

(c) On the date a determination is requested or date temporary disability claim is closed.

All medical reports and other pertinent information in the self-insurer's possession not previously forwarded to the department must be submitted with the request for all determinations.

(4)(a) A self-insured employer shall, upon notice of an industrial injury, provide the injured worker with the opportunity to file a self-insurer accident report (SIF-2) and shall notify the worker of his/her rights and responsibilities under Title 51 RCW. A completed copy of the self-insurer accident report (SIF-2), with an assigned department claim number, is to be provided to the worker within five working days of the date an injured worker submits the SIF-2 to the employer.

(b) A self-insurer, upon closure of a medical only claim, shall issue an order on a form prescribed by the department entitled self-insurer's claim closure order and notice (LI-207-20), which will be supplied to all self-insurers, and by the self-insurers to their employees, in compliance with reporting responsibilities under the law, a copy of which shall be sent to the attending physician.

The self-insurer shall submit monthly statistical information on medical only claims closed during the month by copy of the accident report (SIF #2).

(c) A self-insurer, upon closure of a temporary disability claim, shall issue an order on a format substantially similar to labor and industries Form No. F207-070-000, self-insured employer's time loss claim closure order and notice, 7-86. The self-insurer shall send a copy of the closing order and final SIF-5 to the claimant and the department at the time of closure of a temporary disability claim.

(d) When the department requests claim information by certified mail, the self-insurer shall submit all information in its possession dealing with the claim in question, within ten working days from the date of receipt of such certified mail.

(e) In any case where the department or the self-insured employer has issued an appealable order on a medical-only claim, all subsequent orders in that claim shall be issued by the department.

(f) When an application for reopening of claim for aggravation of condition is received by a self-insured employer or its authorized representative, it shall be the responsibility of the self-insured employer to forward it to the department within five working days from the date of receipt.

(5) Self-insurers may close temporary disability claims with the date of injury occurring July 1, 1986, through June 30, 1988, and occupational disease claims filed July 1, 1986, through June 30, 1988. Self-insured claims that involve a permanent partial disability, an order issued by the department resolving a disagreement, or return to work with a different employer are not subject to closure by the self-insurer.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-070, filed 8/28/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-070, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82-12-035 (Order 82-23), § 296-15-070, filed 5/27/82, effective 7/1/82; 81-24-040 (Order 81-29), § 296-15-070, filed 11/30/81; Order 77-19, § 296-15-070, filed 9/26/77; Order 72-15, § 296-15-070, filed 8/4/72; Order 71-15, § 296-15-070, filed 12/1/71.]

WAC 296-15-072 Claim closure study. A study shall be conducted to determine if self-insured employers are administering claim closure in a proper manner. The study shall include issues involving proper payment of time loss benefits, correctness of claim closure including attending physician concurrence, conditions and duration of reemployment, and correct application of the rehabilitation laws. Protests to claim closures and the outcome of these protests will also be considered. The study will be accomplished by having department disability adjudicators review self-insured temporary disability closures and compile the statistics. This staff will review documents submitted to the department and employer's workers' compensation files. A form will be used to ensure consistency and objectivity in the study. The special assessment base shall be the total claim payments as defined for the administrative cost assessment in WAC 296-15-060.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-072, filed 8/28/86.]

WAC 296-15-080 Statement of financial condition. Every self-insured employer shall, not later than six months following the end of its financial reporting period, submit a fully audited financial statement to the department. This statement shall be for the year just ended, and must be prepared by accountants independent of the employer. It may be the financial statement of the self-insurer's parent, but must include the financial condition of all subsidiary operations. A self-insurer whose financial statement is not available from an accounting firm within this time must make a written request to the department for an extension of the filing time. Any self-insured employer who is a political subdivision of the state, a municipal corporation, or other public entity who is subject to audit by the state auditor may submit a state auditor's report containing the employer's audited financial statement. Public entities which are audited less than once a year by the state auditor must submit a financial statement prepared internally for the years between reports of the state auditor.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-080, filed 7/1/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-080, filed 12/1/83, effective 1/1/84; Order 77-19, § 296-15-080, filed 9/26/77; Order 74-38, § 296-15-080, filed 11/18/74, effective 1/1/75; Order 74-29, § 296-15-080, filed 5/29/74, effective 7/1/74.]

WAC 296-15-090 Application of supplemental moneys in payment of compensation. Each employer authorized to self-insure the liabilities imposed by the industrial insurance law (Title 51 RCW) shall provide the department with a statement of their current policy of applying sick leave, health and welfare insurance benefits or any other compensation in conjunction with or as a substitute for the time loss compensation required in RCW 51.32.090.

(a) Where a self-insurer maintains a person on full salary during a period of temporary total disability due to an injury or illness compensable under Title 51 RCW, a report shall be filed with the department in accordance with WAC 296-15-070.

This report shall indicate the amount of compensation the injured worker is entitled to when computed in accordance with RCW 51.32.060. The amount, so computed and reported, shall be included in the self-insurers total claim costs and therefore be included on the quarterly report of self-insured employer (SIF #6) for the purpose of computing their administrative assessment.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-090, filed 7/1/86; Order 77-19, § 296-15-090, filed 9/26/77; Order 74-38, § 296-15-090, filed 11/18/74, effective 1/1/75.]

WAC 296-15-100 Permanent partial disability awards. Whenever a self-insured employer receives an order and notice establishing a permanent partial disability (PPD) award, on behalf of a worker injured in its employment, the self-insurer shall make payment of the award without delay and in accordance with RCW 51.32.080(4). In all cases, the self-insured employer will notify the department of the date the award is paid.

When the amount of the award exceeds three times the average monthly wage in the state, as established at the date of the workers injury, a schedule of payments shall be prepared. Such schedule shall include all the following information:

The total amount of the disability award.

The amount of the initial payment and the date such payment was made.

The amount of the remaining balance.

The amount of interest earned on the unpaid balance.

The date each subsequent payment will be made.

The amount of each subsequent payment until all moneys have been dispersed.

A copy of this schedule shall accompany the initial payment to the claimant and a copy shall be forwarded to the department in substantially the same form as set forth below.

SCHEDULE OF FUTURE PAYMENTS
FOR THE
BALANCE OF THE PERMANENT PARTIAL DISABILITY
AWARD

EMPLOYER: ____ FIRM NO.

NAME OF CLAIMANT: _____

ADDRESS: _____

CLAIM #: _____

AMOUNT OF AWARD: _____

INITIAL PAYMENT: _____

UNPAID BALANCE: _____

DATE OF PAYMENT	UNPAID BALANCE	INTEREST	TIME LOSS SCHEDULE	AMT. OF PAYMENT
*	*	*	*	*

DATE PAID _____

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-100, filed 7/1/86; Order 77-19, § 296-15-100, filed 9/26/77; Order 74-38, § 296-15-100, filed 11/18/74, effective 1/1/75.]

WAC 296-15-110 Contract with a service organization. Every self-insuring employer utilizing a service organization independent of the self-insurers firm, to aid or participate in any manner in the administration of their responsibilities; including but not limited to: Claims-handling, payment of compensation, accumulation of data and completion of required reports, (both quarterly and annual) or any other such administrative function; shall forward to the department, a copy of the contract which exists between the two, or more, parties for such services: *Provided*, That any clause or clauses in such contract relating to the monetary consideration between the parties may be deleted: *Provided further*, That any provision in such contract relating to the monetary consideration which may increase or decrease such consideration on the basis of an increase or decrease of an employer's claims must be explained in detail and the department may require the employer to supply an unaltered copy of the agreement where it appears reasonably necessary for the purpose of clarification.

Anytime a self-insurer elects to change service organizations, or change or modify the existing contract, a copy shall be forwarded to the department within ten working days of the effective date of the new contract or change.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-110, filed 7/1/86; Order 74-38, § 296-15-110, filed 11/18/74, effective 1/1/75.]

WAC 296-15-120 Log of occupational injuries and illnesses. Each self-insured employer shall, upon request, provide the department any or all information contained on the log of occupational injuries and illnesses (WISHERS #100) maintained in accordance with chapter 296-27 WAC.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-120, filed 7/1/86; Order 74-38, § 296-15-120, filed 11/18/74, effective 1/1/75.]

WAC 296-15-130 Administration of self-insurance. Every self-insurer shall conduct the administration of its self-insurance plan through the services of a person knowledgeable in the application of the industrial insurance law and the rules and regulations for self-insurance.

The person or persons employed or retained as administrators, by either a self-insurer or an employer making application for certification as a self-insurer, must be able to:

(1) Demonstrate, in a manner satisfactory to the department, a thorough knowledge of the industrial insurance laws and the rules and regulations for self-insurance, and

(2) Demonstrate, in a manner satisfactory to the department, an expertise in the adjudication of claims, and

(3) Have the authority and ability to make prompt payment of all compensation and assessments which may become due from such self-insurer; and

(4) Have the authority to make prompt decisions regarding claims adjudication and awards required by Title 51 RCW.

[Order 74-38, § 296-15-130, filed 11/18/74, effective 1/1/75.]

WAC 296-15-135 Contact person. Each self-insurer shall provide the department with the name, title, address, and phone number of a contact person who will be the liaison with the department regarding self-insurance matters, and to whom all self-insurance correspondence will be sent. The self-insurer is to give written notice of any change in contact person within ten working days of the change.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-135, filed 7/1/86.]

WAC 296-15-140 Expense of out-of-state audit. The audit of self-insurance plans at locations outside the state of Washington, shall be at the expense of the self-insurer and the expense incurred in making such audit shall be paid by the self-insurer.

Such expenses shall be calculated at the usual and normal per diem and travel expense rates established by law and in effect at the time the expenses are incurred.

[Order 74-38, § 296-15-140, filed 11/18/74, effective 1/1/75.]

WAC 296-15-145 Expense of withdrawn certificate audit. A self-insurer whose certificate has been withdrawn, whether surrendered voluntarily with the director's approval or involuntarily by order of the director, shall pay expenses incurred by the director, or his representative, in conducting an audit as may be required for the purposes of RCW 51.14.050 through 51.14.090.

[Order 74-38, § 296-15-145, filed 11/18/74, effective 1/1/75.]

WAC 296-15-150 Accident prevention program. Applicants for self-insurance certification are required by RCW 51.14.030(4) to demonstrate to the department the existence of a safety organization which indicates a record of accident prevention within their places of business. Chapter 296-24 WAC sets forth the requirements for an employer's accident prevention program. Accident prevention programs must comply with these rules in order for certification to be granted. Applicants whose programs do not meet these requirements will be denied certification. Employers who are denied certification due to deficient accident prevention programs may be required to wait six months before being considered for certification again. The self-insurer's maintenance of an accident prevention program is also a requirement for continued certification. (RCW 51.14.080(1).)

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–150, filed 7/1/86; Order 74–38, § 296–15–150, filed 11/18/74, effective 1/1/75.]

WAC 296–15–160 Order on compensable claims. In all cases the department shall issue an allowance, segregation or interlocutory order upon receipt of an SIF #5 from a self–insured employer, which reports the first payment of time loss compensation as required by WAC 296–15–070, unless a request for denial has been received on an SIF #4.

Interlocutory orders shall only be issued upon the application for such by a self–insurer. Such orders will be issued at the discretion of the department and only when substantiating documentation and a reasonable explanation as to why an investigation is in order accompanies the request from the self–insurer.

Interlocutory orders shall be effective for a period of sixty days commencing on the date the self–insurer has knowledge or notice of the industrial injury or occupational disease, after which time an allowance or rejection order shall be issued.

All orders shall be issued in accordance with RCW 51.52.050.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–160, filed 7/1/86; Order 77–19, § 296–15–160, filed 9/26/77; Order 75–28, § 296–15–160, filed 8/29/75, effective 1/1/76.]

WAC 296–15–170 Cessation of business––Change of status. (1) A self–insurer that proposes to cease doing business entirely, or proposes to cease doing business in Washington, or proposes to dispose of, by sale or otherwise, the controlling interest of the business for which the certificate was issued shall immediately notify the department in writing of such proposed action and shall, upon request, surrender their certificate for cancellation.

(2) A self–insurer that amends its articles, charter or agreement of incorporation, association, copartnership or sole proprietorship so as to change its identity or business structure or in any manner so as to materially alter its status as a self–insured employer as it existed at the time of the issuance of its certificate shall, within thirty days notify the department in writing of such action and provide the department with information regarding any change in the status of such self–insured employer. The department may, at its discretion, ask for copies of any documents deemed necessary regarding such transactions.

[Order 75–28, § 296–15–170, filed 8/29/75, effective 1/1/76.]

WAC 296–15–180 Examinations for rating disability. In any case where a self–insured employer obtains information from a physician, other than the attending physician, for the purpose of rating or classifying disability, following the receipt of medical evidence that the worker's injury has become medically stabilized, such employer shall request from the attending physician whether or not he concurs in the examining physician's conclusions. If the attending physician is not in agreement with such conclusions or refuses to give an opinion on such conclusions, the self–insured employer may arrange another medical evaluation or forward all medical information to the department. The department may require additional medical examinations.

All costs for such medical examinations and all reasonable expenses incurred by the injured worker shall be paid by the self–insurer to the extent required by RCW 51.32.110.

[Statutory Authority: RCW 51.04.020. 86–14–079 (Order 86–25), § 296–15–180, filed 7/1/86; Order 75–28, § 296–15–180, filed 8/29/75, effective 1/1/76.]

WAC 296–15–190 Notification of rights and obligations. (1) Every self–insurer shall develop and maintain a comprehensive program designed to inform their employees about self–insurance and their rights and obligations. Such a program must include all present employees. Newly hired employees must be advised of their industrial insurance rights and obligations thoroughly during the first thirty calendar days of employment. The method and manner of advising employees of this program must have the approval of the department.

(2) This program shall include, but not be limited to the following:

(a) An explanation of the employees' industrial insurance rights and obligations.

(b) An explanation of the employer's claim processing system.

(c) A statement telling which employees are covered and under what circumstances coverage is provided.

(d) A complete explanation of the payment of all medical bills and the time loss compensation an injured worker can expect to receive if forced to lose time from work due to an injury, or occupational disease sustained at work. And as well, an explanation of the method utilized to periodically determine continued time loss certification.

(e) The extent of the coverage provided and the procedure utilized in closing a claim.

(f) An explanation of the law and rules of the department relating to the payment of medical expenses incurred by an on–the–job injury or occupational disease and as well the procedure for making an application for reopening a closed claim.

(g) An explanation of the role of the department in claims processing. Final orders are issued by the department in all cases, and any request for reconsideration of such orders should be directed to the department. Such explanation shall include a description of the method and manner of appealing orders of the department to the Board of Industrial Insurance Appeals. Further, the mailing address and phone number of the self–insurance offices shall be made known and available to all employees.

(h) An explanation of the supplemental pension fund assessment and the deduction made for that purpose.

(i) An explanation of the way an injured worker, or someone in his behalf, must file a claim. Such an explanation must include the statutory requirement that a claim be filed within one year of the date of the injury or within one year of knowledge of an occupational disease and also that the injured worker is responsible for

filing the claim with his employer along with the certification of a licensed physician as stated in RCW 51.28.020.

(j) An explanation of both scheduled and unscheduled permanent partial disability (PPD) awards.

(3) A self–insurer shall designate a person or persons reasonably accessible to his work locations to whom an injured worker or any employee may direct questions about industrial insurance matters. This individual should have sufficient knowledge to answer routine questions and have the responsibility of seeking answers to more complex problems.

[Order 75-28, § 296-15-190, filed 8/29/75, effective 1/1/76.]

WAC 296-15-200 Claims log--Evaluation. Beginning January 1, 1976, each self–insurer shall maintain a log of all claims filed by any worker injured in its employ or any worker having contracted an occupational disease as a result of his/her employment with the self–insurer.

The claims log shall contain the following minimum information: The injured worker's name, the date of the injury or first knowledge of an occupational disease, the claim number assigned by the department, the date the claim is closed, and whether the claim is compensable or treatment only. Additional information may be recorded at the discretion of the employer.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-200, filed 7/1/86; 83-07-009 (Order 83-8), § 296-15-200, filed 3/8/83; Order 77-19, § 296-15-200, filed 9/26/77; Order 75-28, § 296-15-200, filed 8/29/75, effective 1/1/76.]

WAC 296-15-210 Supplementation of temporary total disability compensation by self–insured employers. Self–insured employers shall make benefit payments to workers injured in their employ in accordance with RCW 51.32.090 and such increased payments as required by RCW 51.32.073.

When a self–insured employer is required to increase the amount of temporary total disability benefits being paid an injured worker and where legislation provides for such increased benefits to be paid from the supplemental pension fund, the department will reimburse the employers in the amount of the increase.

Self–insured employers will be reimbursed from the supplemental pension fund upon their certification that payment was made of such increased benefits to qualified injured workers. Applications for reimbursement from the supplemental pension fund shall be filed quarterly on forms provided by the department.

[Order 77-19, § 296-15-210, filed 9/26/77; Order 75-36, § 296-15-210, filed 10/28/75.]

WAC 296-15-21002 Form--SIF #4--Self–insured employer's notice of denial of claim.

SELF–INSURED EMPLOYER'S NOTICE OF DENIAL OF CLAIM

Claim No. ----------

Date of Notice ----------

Dear

This will notify you that your claim for benefits filed in reference to your injury or occupational disease of ---------- has been received and investigated. The company hereby denies your claim for the following reason(s):

1. ----------

---

2. ----------

---

3. ----------

The Department of Labor and Industries will review this matter and send you an official order on the claim. Either it will reject the claim or issue an allowance order. If you are aggrieved by that order, you may request reconsideration by the Department of Labor and Industries, or you may appeal to the Board of Industrial Insurance Appeals.

THIS LETTER DOES NOT CONSTITUTE OFFICIAL NOTIFICATION OF REJECTION OF YOUR BENEFITS

(Firm Name)

By ----------

cc: Director, Department of Labor and Industries
Attending physician

SIF #4

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-21002, filed 7/1/86; Order 71-15, Form SIF #4 (codified as WAC 296-15-21002), filed 12/1/71.]

WAC 296-15-215 Cash, bond or assignment of account alternative for death or permanent total disability. An "assignment of account" as used in this rule means a legal instrument executed by a self–insurer and a federally or state charted commercial banking institution authorized to conduct business in the state of Washington, for the benefit of the department of labor and industries, which accomplishes the following:

(1) Identifies an existing account on deposit with the banking institution in the name of the self–insurer, which account contains an amount no less than the amount deemed by the department to be sufficient to insure the payment of pension benefits required by law for the claim on which the assignment of account is made, above and beyond any and all other existing assignments on that account.

(2) Binds the self–insurer to maintain a balance in that account at least equal to the current present cash value of the pension benefits provided by law on the claim for which the assignment of account is made, above and beyond all other assignments on that account, for the life of the claim. Present cash values shall be revised annually by the department in conjunction with the insurance commissioner's report as prescribed in RCW 51.44.140. Quarterly payments of pension, if made from

the assigned account, shall not reduce the account balance below the present cash value last established by the department on the claim.

(3) Authorizes the department of labor and industries, upon default of the self–insurer, in any payment of any obligation on the claim for which the assignment of account has been made, to immediately without notice withdraw from the account without obligation of reimbursement of any amount, up to and including the entire amount specified in the assignment of account document, necessary to implement the cash alternative prescribed in RCW 51.44.070(1).

Upon establishment of a death or permanent total disability obligation, the self–insured employer may elect to pursue the bond or assignment of account alternative outlined in RCW 51.44.070(2). In all such cases, cash, bond or assignment of account, the department shall commence to pay benefits immediately upon issuance of an order establishing such obligation. In the event there is a retroactive payment of benefits in the establishment of such obligation, and the self–insured employer elects to pursue RCW 51.44.070(2), this payment shall be made at the time the employer submits the required cash deposit. All further obligations paid by the department from the pension reserve fund shall be reimbursed to the department by the self–insured through the quarterly report system in accordance with RCW 51.44.070(2). Upon election of RCW 51.44.070(2) the self–insured employer shall submit a bond or assignment of account in the amount deemed by the insurance commissioner to be reasonably sufficient to insure payment of the pension benefits provided by law. Such bond or assignment of account and required cash deposit shall be filed with the self–insurance section no later than sixty days after establishment of the death or permanent total disability obligation. The bond or assignment of account alternative as prescribed by RCW 51.44.070(2) shall be allowed only once on any given claim elected at the time of the establishment of such obligation. In the event the amount of the bond is subsequently deemed insufficient and the self–insurer is unable to secure the required bond obligation the employer shall deposit cash into the reserve fund, pursuant to RCW 51.44.070(1), to replace the bond obligation. In the event the amount of the assignment of account is subsequently deemed insufficient and the self–insurer is unable to provide the required assignment of account, the employer shall deposit cash into the reserve fund, pursuant to RCW 51.44.070(1), to replace the assignment of account. Funds available within the existing assignment of account shall, in this instance, be withdrawn by the department, deposited in the reserve fund, and credited toward the employer's obligation for the claim pursuant to RCW 51.44.070(1).

A separate assignment of account shall be established for each pension and, in case of failure of a banking institution carrying an assignment of account, the employer is responsible for the total amount of the obligation. Upon such failure of a banking institution, the self–insured employer shall, within thirty days, 1) establish a new assignment of account pursuant to this rule, or 2) deposit cash into the reserve fund to replace the obligation. If an employer terminates its self–insured status, the assignment of account will be placed with the department. The required reserve will be determined by the insurance commissioner and any excess will be returned to the employer.

[Statutory Authority: RCW 51.04.020. 85–06–031 (Order 85–6), § 296–15–215, filed 3/1/85. Statutory Authority: RCW 51.04.020(1). 83–24–027 (Order 83–22), § 296–15–215, filed 12/1/83, effective 1/1/84. Statutory Authority: RCW 51.04.020 and Title 51 RCW. 81–23–047 (Order 81–27), § 296–15–215, filed 11/18/81.]

WAC 296–15–220 Second injury fund. This rule is promulgated pursuant to RCW 51.16.120 and 51.44.040 and is intended to administrate the second injury fund requirements in RCW 51.16.120 and 51.44.040:

(1) There will be a separate accounting of state fund and self insurance transactions within the second injury fund. Self insurance second injury claim costs and contributions will be recorded in the self–insurers' account. State fund second injury claim costs and contributions will be recorded in the state fund account.

(2) Self–insurer contributions into the second injury fund will be made quarterly in amounts deemed sufficient to meet anticipated self–insurers' second injury claim costs. The self–insurer assessment base shall be total claim payments, as defined for administrative assessments. During the period of time before the first self–insurer second injury claim is approved, self–insurer contributions will be discontinued if the balance in the self–insurer account exceeds $200,000.

(3) State fund payments into the second injury fund will be made from the accident fund and will be the difference between the total cost of all second injury fund claims and the contributions received from self–insurers.

[Order 77–19, § 296–15–220, filed 9/26/77.]

WAC 296–15–230 Third party actions. When the injury to a worker is due to the negligence or wrong of a third person not in the same employ, the injured worker or beneficiary or the self–insured employer may elect to seek damages from the third party as provided by RCW 51.24.020.

(1) When such a third party action is undertaken, the self–insured employer shall report to the department of labor and industries:

(a) The name and claim number of the injured worker;

(b) A written indication of election taken by the injured worker or beneficiary.

(2) When third party action is completed, the self–insured employer shall provide the department the following:

(a) The date the judgment was rendered in the case, and a copy of the court order establishing the total amount of the final judgment and the amount of attorney fees and costs involved, or:

(b) The date of any agreement of parties to settle the action, and a copy of any agreement of parties to settle the case, including the total amount of the agreed settlement.

(c) A statement of the total amount of attorney fees and costs involved, and;

(d) A statement of the employer's total costs, including temporary total disability, permanent partial disability and medical costs.

[Statutory Authority: RCW 51.04.020. 85-06-031 (Order 85-6), § 296-15-230, filed 3/1/85. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-230, filed 12/1/83, effective 1/1/84; Order 77-19, § 296-15-230, filed 9/26/77.]

WAC 296-15-240 Procedure in cases appealed to the superior court. In all cases when any party has appealed to the superior court from a decision of the board of industrial insurance appeals in a case involving a self-insurer, or from the superior court to any appellate court, such a self-insurer shall promptly forward to the department copies of the notice of appeal, judgment, and such other information relevant to any such appeal to a superior or appellate court as the department may require.

[Statutory Authority: RCW 51.04.020. 86-14-079 (Order 86-25), § 296-15-240, filed 7/1/86; Order 77-19, § 296-15-240, filed 9/26/77.]

WAC 296-15-250 Representation in self-insured appeals. The department has determined that in order to protect its interests and the interests of those parties who are beneficiaries of its orders, the department shall be represented in cases where those orders are appealed to the board of industrial insurance appeals.

Pursuant to the authority granted by RCW 51.52.100, the department shall, through the office of the attorney general, appear in proceedings before the board of industrial insurance appeals to defend any of the department orders appealed to the board of industrial insurance appeals by a self-insured employer. Further, the department may elect to appear and defend the department orders appealed by claimants or their beneficiaries when such action is deemed necessary to protect the department's interests.

This rule will apply to appeals filed with the board of industrial insurance appeals on or after the effective date of this rule.

[Statutory Authority: RCW 51.14.020(1). 83-18-038 (Order 83-28), § 296-15-250, filed 9/1/83.]

WAC 296-15-255 Hearings for corrective action or withdrawal of certification. (1) This section applies only to proceedings to withdraw certification or for corrective action instituted by the director in response to a petition filed with the department pursuant to RCW 51.14.090. This section shall not apply to actions instituted by the director to withdraw certification pursuant to RCW 51-.14.080 nor to corrective action instituted by the director pursuant to RCW 51.14.095.

(2) The director is authorized to institute proceedings which may result in corrective action or decertification of a self-insured employer when there is a petition for such action by any employee or union or association having a substantial number of employees in the employ of the self-insured.

When such proceedings are instituted in response to a petition filed under RCW 51.14.090, there shall be a hearing before the director to review and determine findings pertaining to the alleged grounds for action. Any such hearing shall be conducted in accordance with the department's rules governing administrative hearings. The director will notify all parties at least twenty days prior to the date of the hearing. The notice shall include the following:

(a) Nature of proceedings;

(b) Legal authority for holding the hearing;

(c) Reference to the section of statutes and rules involved;

(d) A description of matters asserted;

(e) The date, time, and place of the hearing.

All parties will be allowed to respond and present evidence and arguments on the issues involved.

Within thirty days of the hearing date, the department will provide written notification of the proceedings, findings, and conclusions to all hearing participants.

(3) If, following the hearing, the decision is to withdraw certification or take corrective action, such action shall comply with the provisions of RCW 51.14.090 (2) and (3) in the case of withdrawal of certification, and RCW 51.14.095 (1), (2), and (3) in the case of corrective action.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-255, filed 8/28/86.]

WAC 296-15-260 Corrective action or withdrawal of certification. (1) Corrective action against a self-insured employer shall be by order and notice. A notice of corrective action shall include the nature and specifics of the findings and may include the following:

(a) Probationary certification status for the self-insured employer for a period not to exceed one year;

(b) Mandatory training to correct areas of program deficiency to be approved by the department.

The subject matter to be covered shall be specified in the notice of corrective action. Personnel required to attend and the time period within which the training is to be conducted will also be identified.

(c) Monitoring activities of the self-insured employer for a specified period of time to determine progress regarding correction of program deficiencies may be required. The department may require submission of complete and accurate records and/or conduct an audit to verify program compliance.

(d) If there is a contract between the self-insured employer and a service organization which has been filed with the department (WAC 296-15-110), the corrective action order may specify and require that the service organization be subject to mandatory training and monitoring of activity provisions of the order.

(e) The corrective action order shall specify a time frame for submission of progress reports to the department's self-insurance administrator.

(f) During the first thirty days following the corrective action order, the self-insured employer shall submit a plan for the implementation of corrective action which

shall include specific completion dates. If the plan is determined to be incomplete or inadequate, the department's self-insurance administrator shall notify the self-insurer of the necessary requirements or changes needed, and shall specify the date by which an amended plan shall be submitted.

(2) If sufficient grounds for decertification exist, an order and notice will be issued. The order and notice will include the following:

(a) The grounds upon which the determination is based.

(b) The period of time within which the grounds existed or arose.

(c) A statement to the self-insurer specifying the means by which the program deficiencies may be corrected.

(d) The date, not less than thirty days after the self-insured employer's receipt of the order and notice, when certification will be withdrawn in absence of satisfactory remedial action.

(e) Provisions as stipulated by RCW 51.14.090.

(3) Upon conclusion of the probationary certification period in the case of corrective action, or the remedial action period in the case of decertification, the program deficiencies requiring corrective or remedial action by the self-insured employer shall be evaluated by the department and a written report sent to affected parties. Program activities may be reaudited beyond the stated time period in order to assess continuing compliance with the objectives of the corrective action directives.

(4) If, at the conclusion of the probationary period or remedial action period, program deficiencies continue to exist, the department shall decide whether to extend the period of probation, require additional corrective action or proceed with decertification of the self-insured employer. An order and notice stating the decision shall be issued.

[Statutory Authority: RCW 51.04.020. 86-18-037 (Order 86-35), § 296-15-260, filed 8/28/86. Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-260, filed 12/1/83, effective 1/1/84.]

WAC 296-15-265 Penalties. The department may assess penalties against a self-insurer at any time it is determined that grounds exist for such penalties as provided for in Title 51 RCW. The department shall issue an order and notice which shall state the grounds for which the penalty is assessed and the amount assessed. Upon receipt of the order and notice, the self-insurer shall pay the penalty assessment within 10 days following the date the order becomes final and binding.

[Statutory Authority: RCW 51.04.020(1). 83-24-027 (Order 83-22), § 296-15-265, filed 12/1/83, effective 1/1/84.]

Chapter 296-15A WAC
INDUSTRIAL INSURANCE DISCRIMINATION

WAC

296-15A-010 Definitions.
296-15A-020 Filing a complaint of discrimination.

WAC 296-15A-010 Definitions. For the purposes of this chapter, the following words shall have these meanings: (1) "Director" shall mean the director of the department of labor and industries of the state of Washington.

(2) "Employee" shall have the same meaning as that defined in [RCW] 51.08.180 and 51.08.185.

(3) "Employer" shall have the same meaning as defined in RCW 51.08.070.

[Statutory Authority: 1985 c 347 § 8 and RCW 51.04.020. 86-01-016 (Order 85-35), § 296-15A-010, filed 12/9/85.]

WAC 296-15A-020 Filing a complaint of discrimination. (1) Any employee who believes that he or she has been discharged or otherwise discriminated against by an employer in violation of this section may file a complaint with the director alleging discrimination within ninety days of the date of the alleged violation. Upon receipt of such complaint, the director shall cause an investigation to be made as the director deems appropriate. Within ninety days of the receipt of the complaint filed under this section, the director shall notify the complainant of his or her determination. If upon investigation, it is determined that this section has been violated, the director shall bring an action in the superior court of the county in which the violation is alleged to have occurred.

(2) Who may file. A complaint of discrimination may be filed by the employee.

(3) Nature of filing. A complaint must be filed in writing; however, no particular form of complaint is required.

(4) Place of filing. The complaint should be filed with the director of the department of labor and industries. The complaint should be sent to the Director of the Department of Labor and Industries, Olympia, Washington 98504.

[Statutory Authority: 1985 c 347 § 8 and RCW 51.04.020. 86-01-016 (Order 85-35), § 296-15A-020, filed 12/9/85.]

Chapter 296-16 WAC
EMPLOYER--WORKER REEMPLOYMENT INCENTIVES

WAC

296-16-010 Premium waived for employment of preferred worker.

WAC 296-16-010 Premium waived for employment of preferred worker. In order to implement the provisions of RCW 51.16.120(3) by way of encouraging employment of injured workers who are not reemployed by the employer at the time of injury, the following provisions are adopted:

Any employer who employs a "preferred worker" as defined in these rules shall be excused from the payment of industrial insurance premiums and/or accident costs under the circumstances and conditions herein provided:

(1) A "preferred worker" may be classified as such by the department when the supervisor or his or her designee shall determine, in his or her discretion, that such

person has sustained an industrial injury or occupational disease under our state Industrial Insurance Act which prevents the worker from returning to work with the former employer and that such injury or occupational disease is substantially impairing the likelihood of such worker's reemployment with other employers.

(2) Any state fund employer, other than the employer at the time of injury or exposure, who employs a "preferred worker" shall be excused, during the period of employment of such worker but not to exceed thirty-six calendar months, from the payment of any accident fund premiums and medical aid premiums which would otherwise be due based upon such employment.

(3) In the event that a further injury or occupational disease is sustained by a reemployed "preferred worker" during the first thirty-six months subsequent to the hiring of such "preferred worker," while in the employ of the accepting employer, such employer, whether insured by the state fund or self-insured, shall not be charged with the costs of any such claim which would otherwise be charged to or paid by such employer. Such costs shall be charged against the second injury fund.

The provisions of subsections (2) and (3) of this section shall apply only if the department acknowledges the application of such rules in writing.

[Statutory Authority: RCW 51.04.020(1) and 51.16.120(3). 85-13-027 (Order 85-12), § 296-16-010, filed 6/11/85. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-033 (Order 80-24), § 296-16-010, filed 12/1/80, effective 1/1/81.]

Chapter 296-17 WAC
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WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-17-010 Seventy-five percent of average cost of pension claims—Industrial insurance base rates and medical aid rates. [Order 70-11, § 296-17-010, filed 11/30/70, effective 1/1/71; Order 69-5, § 296-17-010, filed 12/1/69; Order 68-8, § 296-17-010, filed 11/27/68, effective 1/1/69; General Order 1-67, filed 11/20/67, effective 1/1/68; General Order 1-66, filed 11/28/66, effective 1/1/67; General Order 1-65, filed 11/30/65, effective 1/1/66.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-020 Agricultural workers. [Order 68-9, § 296-17-020, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-030 Agricultural workers—Definition of casual employee. [Order 68-9, § 296-17-030, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-040 Agricultural workers—Payroll audit equivalent for hours of work. [Order 68-9, § 296-17-040, filed 2/26/69, effective 4/1/69.] Repealed by Order 71-14, filed 12/1/71, effective 1/1/72.

296-17-100 Premium payments—Quarterly reports. [Order 72-12, § 296-17-100, filed 7/18/72; Order 71-14, § 296-17-100, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-110 Determining accident fund premiums—Cost experience. [Order 72-19, § 296-17-110, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-110, filed 2/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-120 Merit rating plan. [Order 72-19, § 296-17-120, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-120, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-130 Credibility table for industrial insurance rates. [Order 72-19, § 296-17-130, filed 11/30/72, effective 1/1/73; Order 71-14, § 296-17-130, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/19/73, effective 1/1/74.

296-17-140 Average cost of pension claims—Effective date. [Order 71-14, § 296-17-140, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-150 Basis for determining medical aid premium. [Order 71-14, § 296-17-150, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-160 Qualifications for employer groups or workmen's compensation insurance. [Order 71-14, § 296-17-160, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-170 Dividends. [Order 71-14, § 296-17-170, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-180 Industrial insurance (accident fund) base rates and medical aid rates by class of industry. [Order 72-19, § 296-17-180, filed 11/30/72, effective 1/1/73; Order 72-12, § 296-17-180, filed 7/18/72; Order 71-14, § 296-17-180, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-190 Notice of employer inclusion—Reporting of hours. [Order 71-14, § 296-17-190, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-200 Minimum premium for elective adoption. [Order 71-14, § 296-17-200, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74.

296-17-210 Assessment for supplemental pension fund. [Order 73-16, § 296-17-210, filed 8/27/73; Order 72-16, § 296-17-210, filed 8/4/72; Order 71-14, § 296-17-210, filed 12/1/71, effective 1/1/72.] Repealed by Order 73-22, filed 11/9/73, effective 1/1/74. Second repeal by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-375 Work done by contract. [Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-375, filed 11/30/83, effective 1/1/84.] Repealed by 85-12-024 (Order 85-11), filed 5/31/85. Statutory Authority: RCW 51.16.035.

296-17-531 Classification 8-6. [Order 73-22, § 296-17-531, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-533 Classification 9-2. [Order 73-22, § 296-17-533, filed 11/9/73, effective 1/1/74.] Repealed by 80-17-016 (Order 80-23), filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.16.035.

296-17-543 Classification 14-3. [Order 73-22, § 296-17-543, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-547 Classification 16-2. [Order 73-22, § 296-17-547, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-553 Classification 18-2. [Order 73-22, § 296-17-553, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-554 Classification 18-3. [Order 73-22, § 296-17-554, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-559 Classification 20-6. [Order 73-22, § 296-17-559, filed 11/9/73, effective 1/1/74.] Repealed by 80-17-016 (Order 80-23), filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.16.035.

296-17-577 Classification 33-8. [Order 73-22, § 296-17-577, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-588 Classification 35-4. [Order 73-22, § 296-17-588, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-589 Classification 35-5. [Order 73-22, § 296-17-589, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-591 Classification 35-7. [Order 73-22, § 296-17-591, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-593 Classification 36-1. [Order 73-22, § 296-17-593, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-601 Classification 37-3. [Order 73-22, § 296-17-601, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Repealed by 85-06-026 (Order 85-7), filed 2/28/84, effective 7/1/85. Statutory Authority: RCW 51.16.035.

296-17-602 Classification 37-6. [Order 73-22, § 296-17-602, filed 11/9/73, effective 1/1/74.] Repealed by 79-12-086 (Order 79-18), filed 11/30/79. Statutory Authority: RCW 51.04.030 and 51.16.035.

296-17-607 Classification 38-3. [Order 73-22, § 296-17-607, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-608 Classification 38-4. [Order 73-22, § 296-17-608, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-609 Classification 38-5. [Order 73-22, § 296-17-609, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-610 Classification 38-6. [Order 73-22, § 296-17-610, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-611 Classification 38-7. [Order 73-22, § 296-17-611, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-613 Classification 38-9. [Order 73-22, § 296-17-613, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-617 Classification 39-4. [Order 73-22, § 296-17-617, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-621 Classification 41-2. [Order 73-22, § 296-17-621, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-623 Classification 41-4. [Order 73-22, § 296-17-623, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-624 Classification 41-5. [Order 73-22, § 296-17-624, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-625 Classification 41-6. [Order 73-22, § 296-17-625, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-632 Classification 4303. [Statutory Authority: RCW 51-.16.035. 85-24-032 (Order 85-33), § 296-17-632, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-632, filed 11/9/73, effective 1/1/74.] Repealed by 86-12-041 (Order 86-18), filed 5/30/86, effective 7/1/86. Statutory Authority: RCW 51.16.035.

296-17-639 Classification 45-3. [Order 75-38, § 296-17-639, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-639, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-642 Classification 47-1. [Order 73-22, § 296-17-642, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-648 Classification 48-7. [Statutory Authority: RCW 51-.16.035. 83-24-017 (Order 83-36), § 296-17-648, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-648, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-648, filed 11/9/73, effective 1/1/74.]. Repealed by 85-06-026 (Order 85-7), filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.16.035.

296-17-664 Classification 51-4. [Order 73-22, § 296-17-664, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-665 Classification 51-5. [Order 73-22, § 296-17-665, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-667 Classification 51-7. [Order 75-38, § 296-17-667, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-667, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-671 Classification 52-2. [Order 73-22, § 296-17-671, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-

047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-672 Classification 52-3. [Order 73-22, § 296-17-672, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-674 Classification 52-5. [Order 73-22, § 296-17-674, filed 11/9/73, effective 1/1/74.] Repealed by 82-24-047 (Order 82-38), filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.16.035.

296-17-683 Classification 61-6. [Order 73-22, § 296-17-683, filed 11/9/73, effective 1/1/74.] Repealed by 78-12-043 (Order 78-23), filed 11/27/78, effective 1/1/79. Statutory Authority: RCW 51.04.020(1) and 51.16.035.

296-17-702 Classification 63-7. [Order 73-22, § 296-17-702, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-705 Classification 64-1. [Order 73-22, § 296-17-705, filed 11/9/73, effective 1/1/74.] Repealed by Order 75-38, filed 11/24/75, effective 1/1/76.

296-17-720 Classification 65-7. [Order 73-22, § 296-17-720, filed 11/9/73, effective 1/1/74.] Repealed by 81-24-042 (Order 81-30), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.16.035.

296-17-728 Classification 66-6. [Order 73-22, § 296-17-728, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-732 Classification 67-1. [Order 73-22, § 296-17-732, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-733 Classification 67-2. [Order 73-22, § 296-17-733, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

296-17-734 Classification 67-3. [Order 73-22, § 296-17-734, filed 11/9/73, effective 1/1/74.] Repealed by Order 74-40, filed 11/27/74, effective 1/1/75.

WAC 296-17-310 General rules and instructions. This section constitutes general rules and instructions for chapter 296-17 WAC.

(1) **Purposes.** This chapter of the Washington Administrative Code, including classifications of risk, premium rates, the experience rating plan, and all other rules contained herein governing the use thereof, is herein referred to as the manual. This manual is promulgated by the department of labor and industries pursuant to RCW 51.16.035. This manual contains a formulation of the rules and regulations providing for basic classifications, rates of premium, method of premium calculation and collection, and a rating system, consistent with recognized principles of workers' compensation insurance. This manual governs the department's underwriting of workers' compensation insurance and assessment of other monetary obligations, under the industrial insurance law of the state of Washington, Title 51 RCW.

(2) **Overview.** Washington law (RCW 51.16.035) requires that the department of labor and industries classify all occupations or industries by degree of hazard. To accomplish this, the department has established approximately two hundred sixty basic classifications of risk embracing the various industries within the state (the actual number may vary from year to year). These basic classifications are set forth in WAC 296-17-501 through 296-17-779. The general principles and objectives of the basic classification system are set forth in WAC 296-17-310.

The first step in determining the appropriate classification for an employer is to determine the nature of the employer's business being insured in this state. If the department determines that an employer's business consists of a single operation or a number of separate operations which normally prevail in that business then the single enterprise rule (WAC 296-17-380) is applicable. This rule provides that the department is to assign the single basic classification which most accurately describes the employer's entire enterprise. This process begins with the search for a basic classification which specifically describes the employer's business. If such a basic classification is found the process of assigning a basic classification is complete.

If the employers' business operation is not specifically described by any basic classification then the employer's business is to be classified as provided for in WAC 296-17-360 (assignment of classification by analogy). In classifying by analogy the department examines the process and hazard of the employer's business and compares it to that of other basic classifications with processes and hazards that are similar to those of the employer's business and assigns the most analogous classification on that basis.

In the event that a review of the employer's business operations indicates the possibility that the employer conducts more than one business within this state, a determination will be made as to whether any additional basic classifications should be assigned on the basis of the criteria set out in the multiple enterprise rule (WAC 296-17-390).

Once the employer's basic classification has been established, the department must determine whether additional classifications should be assigned to apply to specific employments within an employer's business such as the standard exception rule (WAC 296-17-440), the general exclusion rule (WAC 296-17-430), the special exception rule (WAC 296-17-441), or those indicated by the language of any applicable basic classifications that permit or require separate reporting of any operations within that business or industry.

(3) **Premium payments - quarterly reports.** Each employer shall, upon such forms as prescribed by the department, prior to the last day of January, April, July and October of each year, pay to the department for the preceding calendar quarter, for the accident fund, and for the medical aid fund, a certain number of cents for each worker hour or fraction thereof worked by the worker in their employ except when the rules of this manual provide for a different method of premium computation. Provided, that in the event an employer has no employment subject to coverage under Title 51 RCW during a calendar quarter the employer shall submit to the department, according to the schedule described above, a quarterly report indicating "no payroll" or be subject to the penalties provided for in WAC 296-17-480. The director may promulgate, change and revise such rates at such times as necessary, according to the condition of the accident and medical aid funds, and assign rates as appropriate to employers who voluntarily

seek coverage under the elective adoption provisions of the law.

(4) **Determining accident fund premium.** The amounts to be paid into the accident fund shall be determined as follows: The department shall determine a manual premium rate for each classification which shall not be inadequate, excessive or unfairly discriminatory, taking into consideration past and prospective costs in each classification and the financial condition of the accident fund as a whole.

Every employer shall pay into the accident fund at the manual premium rate unless such employer meets the requirements for the experience rating plan provided elsewhere in this manual, in which event such employer's premium rate for the accident fund shall be paid according to their experience modification as determined under the experience rating plan.

(5) **Basis for determining medical aid premium.** The amounts to be paid into the medical aid fund shall be determined as follows: The department shall determine a basic medical aid rate for each classification which shall not be inadequate, excessive or unfairly discriminatory, taking into consideration past and prospective costs in each classification and the financial condition of the medical aid fund as a whole.

Every employer shall pay into the medical aid fund at the basic premium rate only, and the experience rating plan shall not apply to medical aid rates.

(6) All section captions or titles or catch lines used in this manual, chapter 296-17 WAC, do not constitute any part of these rules.

(7) **Assignment of classifications.** The classifications in this manual are all basic classifications other than the standard exception classifications which are defined in WAC 296-17-440. Basic classifications are used to implement the object of the classification system, which is to assign the one basic classification which best describes the business of the employer within this state. Each basic classification includes all the various types of labor found in a business unless it is specifically excluded by language contained within the classification or covered by a separate rule found elsewhere in this chapter, such as "standard exceptions" or "general exclusions." The classification procedure used within this state is intended to classify the business undertaking of the employer and not the separate employments, occupations, or operations of individuals within a business.

In the event an employer operates a secondary business within this state, multiple basic classifications can be assigned provided that the conditions set forth in WAC 296-17-390 "multiple enterprises" have been met.

(8) **All operations.** Each basic classification in this manual, other than classifications 4806, 4904, 5206, 6301, 6302, 6303, 7101, or the temporary help classifications 7104 through 7109, include all the operations normally associated with the business undertaking without regard to the location(s) of such operation(s) unless an operation is specifically excluded from the manual language of the basic classification.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-310, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-310, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-310, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-310, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-310, filed 11/30/77, effective 1/1/78; Order 75-28, § 296-17-310, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-310, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-310, filed 11/9/73, effective 1/1/74.]

WAC 296-17-320 General definitions. For the purpose of interpretation of this manual, chapter 296-17 WAC, the following terms shall have the meanings given below:

(1) "Workers' compensation" means the obligation imposed upon an employer by the industrial insurance laws of the state of Washington, to insure the payment of benefits prescribed by such laws.

(2) "Risk" means and includes all insured operations of one employer within the state of Washington.

(3) "Classification" means a grouping of businesses or industries having common or similar exposures without regard to the separate employments, occupations, or operations comprising the employer's work force.

(4) "Basic classification" shall be understood to have the same meaning as classification defined in subsection (3) of this section.

(5) "Exposure" means worker hours, worker days, payroll or other measure of the extent to which an employer's workers have been exposed to the hazards of a particular classification of employment.

(6) "Rate" means the amount of premium for each unit of exposure. All rates are rates per worker hour except where specifically provided otherwise in this manual.

(7) "Premium" means the sum derived from the application of the rates to the exposures in each classification, after application of any duly authorized experience modification, except where the rules of this manual indicate otherwise.

(8) Unless the context indicates otherwise, the words used in this manual shall have the meanings given in Title 51 RCW.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-320, filed 5/30/86, effective 7/1/86; 85-06-026 (Order 85-7), § 296-17-320, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-320, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-320, filed 11/9/73, effective 1/1/74.]

WAC 296-17-330 Officers or members of a corporate employer. As used in this manual, the terms "member" and "officer" are synonymous and mean any executive officer elected and empowered in accordance with the articles of incorporation or bylaws of a corporation and who is also a director and shareholder of the corporation.

All such regularly constituted executive officers who have not voluntarily elected to withdraw from coverage or who have been included for coverage in accordance with RCW 51.12.020 and 51.12.110 shall be included in the corporation's statement of payroll (on a form prescribed by the department) and premium shall be

charged thereon. Any such regularly constituted executive officer who is compensated by means of a wage or a salary for work performed for the corporation shall be regarded as an employee. For the purpose of this rule, wages or salary shall be construed as meaning earnings of any kind, actual or anticipated. Each executive officer electing coverage pursuant to RCW 51.12.110 shall report and pay premiums based on one hundred sixty hours per month until such time as elective adoption coverage is cancelled. This will apply to all executive officers electing coverage regardless of the method of compensation.

The statement of payroll so developed of each executive officer shall be assigned to classification 7101, WAC 296-17-754: *Provided, however,* That the statement of payroll of each executive officer who performs such duties as are ordinarily undertaken by a superintendent, foreman, or worker, shall be assigned as provided in this manual of an individual employee who is not an executive officer: *Provided further,* That no executive officer will be assigned the "clerical office" classification: *Provided further,* In case the employer's business is subject to a classification which specifically includes clerical office or salesmen, and the corporate officer's duties are primarily in connection with such business, the classification assigned to the business shall apply with respect to any such executive officer.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-330, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-330, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-330, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-330, filed 11/27/78, effective 1/1/79; Order 75-28, § 296-17-330, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-330, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-330, filed 11/9/73, effective 1/1/74.]

WAC 296-17-340 Sole proprietors and partners. Any individual employer (sole proprietor or partner) desiring to obtain coverage (under the authority of RCW 51.32.030, as now or hereafter amended) shall give notice in writing on a form prescribed by the department. Any such employer so covered shall be assigned without division to the governing classification; provided, in case of the employer conducting a separate enterprise, the "multiple enterprise" rule as set forth in this manual shall apply.

In case of the employer conducting any aircraft operations, the hours of the sole proprietor or partner who is a pilot or member of the crew on any aircraft used in the employer's business, shall be assigned to the appropriate aviation class and where an "aircraft operation" classification applies, the entire number of hours of the employer shall be assigned to this classification unless the records of the employer indicate the hours in which flying is performed by such employer; in such event, only the hours such employer is engaged in flying shall be assigned to the aircraft operation classification. The hours in which no flying was done shall be assigned to the governing classification. If "aircraft operations, N.O.C.," as defined in this manual, is the governing classification, the hours in which no flying was done shall be assigned to the aircraft operations, N.O.C., ground crew classification.

Each sole proprietor or partner who has elected coverage pursuant to RCW 51.32.030 shall report and pay premiums based on one hundred sixty hours per month until such time as elective coverage is cancelled. This will apply to all sole proprietors and partners who have elected coverage regardless of the method of compensation.

[Statutory Authority: RCW 51.16.035. 84-24-016 (Order 84-23), § 296-17-340, filed 11/28/84, effective 1/1/85; Order 75-28, § 296-17-340, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-340, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-340, filed 11/9/73, effective 1/1/74.]

WAC 296-17-345 Professional and semiprofessional athletic teams. Athletes assigned to a Washington-domiciled sports team are mandatorily covered by Washington industrial insurance: *Provided,* That a professional athlete who is under contract with a parent team domiciled outside of the state of Washington while assigned to a team domiciled within Washington is subject to mandatory coverage by Washington industrial insurance unless the player and employer (parent team) have agreed in writing as to which state shall provide coverage in accordance with RCW 51.12.120(5).

The following rules shall apply to the written agreement:

(1) Agreement must be in writing and signed by the employer and the individual athlete.

(2) Agreement must specify the state that is to provide coverage. The state agreed upon to provide coverage must be a state in which the player's team, during the course of the season, will engage in an athletic event. For example, if the Washington-based team is a part of a league with teams in only Washington, Oregon, and Idaho, the player and the employer can agree to any of those three states to provide coverage. However, they could not agree to have California provide the coverage as this would not qualify as a state in which the player regularly performs assigned duties.

(3) The state agreed upon accepts responsibility for providing coverage and acknowledges such to the department by certified mail.

(4) Agreement and certification by the other state must be received by this department's underwriting section prior to any injury incurred by the athlete.

(5) Agreement will be for one season only commencing with the assigning of the player to a particular team. A separate agreement and certification must be on file for each additional season.

Failure to meet all of these requirements will result in the athlete being considered a Washington worker for premium and benefit purposes until such time as all requirements have been met.

Professional sports teams who are domiciled outside the state of Washington and who participate in sporting events with Washington-domiciled teams are not subject to Washington industrial insurance for their team members while in this state. These out-of-state teams are not considered employers subject to Title 51 on the basis that they are not conducting a business within this state.

[Statutory Authority: RCW 51.04.020(1). 84-19-024 (Order 84-19), § 296-17-345, filed 9/13/84.]

WAC 296-17-350 Minimum premiums--Assumed worker hours. A minimum premium is the lowest amount of premium to be paid by an employer and is also the basis for determining premium computation for workers for whom an assumed number of worker hours must be, and hereby, is established:

(1) **Minimum premium.** Except as otherwise provided in this chapter, every employer shall be liable for a premium not less than ten dollars for any calendar quarter regardless of number of worker hours reported.

(2) **Minimum premium for elective adoption.** Any employer having in their employ any person exempt from mandatory coverage whose application for coverage under the elective adoption provisions of RCW 51.12.110 is accepted by the director, shall have a minimum premium rate for such employer's applicable class based upon not less than 40 worker hours for each month, until such time as elective adoption coverage is cancelled: *Provided*, That the minimum premium rate as specified above shall not apply to sole proprietors, partnerships, or executive officers obtaining coverage subject to other provisions of this chapter.

(3) Resident managers, caretakers, or similar employments that are employed for irregular periods and whose compensation is for a stipulated sum in money or a substitute for money shall be reported for the purpose of premium calculation as provided in subsection (6) of this section.

(4) **Commission personnel.** Commission personnel are persons whose compensation is based upon a percentage of the amount charged for the commodity or service rendered. Commission personnel are to be reported for premium purposes at a minimum of assumed worker hours of not less than eight worker hours a day for part-time employment, or not less than 40 worker hours per week for full-time employment: *Provided*, That the assumed eight worker hours daily for part-time employment will apply only if the employer's books and records are maintained so as to show separately such person's actual record of employment.

(5) **Salaried personnel.** Salaried personnel for the purposes of this chapter means persons whose compensation is not governed by the number of hours devoted to employment for their employer. Employers having salaried personnel in their employ shall for the purpose of premium calculation report assumed worker hours based upon one hundred sixty worker hours for each month in which the employee is on salary: *Provided*, That if the employer maintains complete and accurate records, supported by original time cards or timebook entries, the employer may report and pay premium on the actual hours worked by salaried personnel. All salaried personnel must be reported in the same manner: *Provided further*, That the department may, at its discretion, authorize some other method in assuming workers hours for premium calculating purposes in the case of contract personnel employed by schools and/or school districts.

(6) **Piece workers.** Employees whose compensation is based upon the accomplishment of a number of individual tasks whether computed on the number of pounds, items, pieces, or otherwise, the employer shall for the purpose of premium calculation assume each two dollars of earnings of each employee as representing one worker hour: *Provided*, That if the average rate of compensation for the applicable classification is at least $3.00 but less than $3.50 per worker hour the assumed amount shall be $3.00 of earnings as representing one worker hour, and on a progressive basis, if the average compensation is at least $3.50 but less than $4.00 the assumed amount shall be $3.50 of earnings as representing one worker hour, and so forth. The records of the department as compiled for the preceding fiscal year ending June 30, shall be the basis for determining the average rate of compensation for each classification: *Provided further*, That if the employer maintains books and records to show separately the hours employed for each worker in their employ engaged in piece work then such actual worker hours shall be reported for the purpose of premium calculation. Notwithstanding any other provisions of this section, workers employed in a work activity center pursuant to WAC 296-17-779 shall be reported on the basis of the piece worker rule.

(7) **Noncontact sports teams.** All employers having personnel in their employ as defined under WAC 296-17-745 shall for the purpose of premium calculations, report assumed worker hours based upon 40 worker hours for each week in which any duties are performed.

(8) All employers having personnel in their employ as defined under WAC 296-17-739 shall, for the purpose of premium calculations, report assumed worker hours based upon ten hours for each mount in each horse race; professional drivers shall report worker hours based upon ten hours for each heat or race of any racing event: *Provided*, That any day such personnel do not ride or drive in a race, the premium calculation shall be made by assuming ten worker hours for any day in which duties are performed.

(9) Pilots and flight crew members having flight duties during a work shift including preflight time shall have premium calculated by utilizing daily readings logged per federal requirements of the aircraft tachometer time: *Provided*, That if the total tachometer time for any day includes a fraction of an hour, the reportable time will be increased to the next full hour: *Provided further*, That pilots and flight crew members who assume nonflying duties during a work shift will have premium calculated in accordance with the appropriate rules and classifications applicable to nonflight duties.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-350, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-350, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.020(1). 84-11-034 (Order 84-11), § 296-17-350, filed 5/15/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-350, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-350, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-350, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-350, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-350, filed 5/31/77; Order 76-18, § 296-17-350, filed 5/28/76, effective 7/1/76; Order 75-28, § 296-17-350, filed

8/29/75, effective 10/1/75; Order 74-40, § 296-17-350, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-350, filed 11/9/73, effective 1/1/74.]

WAC 296-17-351 Periodic review of cash deposit. The supervisor of industrial insurance through the audit and collection section of the division of industrial insurance will periodically review the cash deposit or bond of all employers and all new employers or employers resuming operations pursuant to RCW 51.16.110.

The department will cancel the cash deposit or bond having been made by an employer who has been conducting a business or trade and who has been reporting premium payments to the department for at least 12 consecutive calendar quarters: *Provided, however,* The cancellation of the deposit or bond shall be contingent upon:

(1) The initial deposit or bond is deemed by the department as having adequately represented the premiums covering the first three full calendar months of operations.

(2) The employer's quarterly reports and premium payments covering any such 12 consecutive quarterly reporting periods have been made in accordance with the provisions as set forth in Title 51 RCW and in accordance with WAC 296-17-310: *Provided further,* In the event cancellation of the deposit or bond has been made on behalf of any employer and such employer subsequently fails to submit reports and payments, as required, such employer shall, upon request be required to reinstate the deposit or bond.

[Statutory Authority: RCW 51.04.020 and Title 51 RCW. 82-10-034 (Order 82-16), § 296-17-351, filed 4/30/82. Statutory Authority: RCW 51.16.035. 80-17-016 (Order 80-23), § 296-17-351, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-351, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-351, filed 11/30/76; Order 74-29, § 296-17-351, filed 5/29/74, effective 7/1/74.]

WAC 296-17-35101 Employer's surety bond in lieu of a cash deposit. The department may, in its discretion, accept an employer's surety bond to the state of Washington in lieu of a cash deposit as provided for in RCW 51.16.110. Such employer's surety bond must be on the prescribed forms authorized by the department. Such employer's surety bond shall be in $1,000.00 increments and based on estimated premiums covering three full calendar months of operations. The dollar value of the surety bond will be calculated such that the amount of the surety is rounded to the highest $1,000 increment. Provided further, that any employer securing a surety bond in lieu of a cash deposit will maintain such bonds for a minimum of three full calendar years representing twelve full reporting quarters in accordance with WAC 296-17-351 unless such an employer ceases to be an employer subject to this title.

[Statutory Authority: RCW 51.04.020(1). 84-06-018 (Order 84-3), § 296-17-35101, filed 2/29/84.]

WAC 296-17-352 Audits. An audit of the employer's books, records and payrolls performed pursuant to the authority contained in RCW 51.48.040 may include but will not be limited to:

(1) An audit to determine whether an employer engaged in a business or trade has employment subject to the industrial insurance laws.

(2) A visual inspection of the employer's workplace or places for the purpose of determining appropriate classifications in accordance with the industrial insurance laws and rules as set forth in chapter 296-17 WAC.

(3) Audits containing a complete and detailed examination of the employer's books and records for a specific period to establish the reporting of the employer's payroll in accordance with the industrial insurance laws and the rules as set forth in chapter 296-17 WAC, and as well, chapter 296-15 WAC in the event the employer has been certified a self-insurer.

Except as otherwise provided in this rule any audit time period may be less than, but will not exceed, three years of the due dates of any payments from any employer where the department has requested submission of the employer's books, or three years of the due dates of any payments where the employer makes claim for adjustment, recomputation or alteration of any such payment: *Provided,* That an employer certified to self-insure pursuant to the authority contained in chapter 51.14 RCW, shall be subject to such audit as deemed necessary to guarantee its compliance with the industrial insurance laws and rules and regulations for self-insurers: *Provided further,* That an employer who fails to make any books and records, or certified copies thereof, available for audit in the state of Washington, will be charged for all costs incurred by the department in auditing any books and records maintained at other places: *Provided further,* That in any instance where fraud may be indicated with respect to underpayment or nonpayment of premiums the audit time period may be extended beyond that previously set forth.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-352, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-352, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-352, filed 11/30/76; Order 76-18, § 296-17-352, filed 5/28/76, effective 7/1/76.]

WAC 296-17-360 Assignment of classification by analogy. The classification section of this manual contains a listing of basic classifications covering most businesses and industries.

Any enterprise or operation which is not described by such classifications shall be assigned to the basic classification(s) most analogous from the standpoint of process and hazard.

The alphabetical index section of the manual includes a number of businesses and industries that are not contained in the rule part of this manual. When such a listing is identified by the letter "A" standing for analogy, it is the intended purpose of this symbol and listing of such operations in the index to be included in the same manner as if such operations were contained in the rule part of this manual.

The limitations and conditions of the basic classification(s) so assigned and all manual rules pertaining thereto shall be applicable: *Provided*, That when a basic classification carries the phraseology of N.O.C. and the business undertaking of the employer to be classified is not specifically described by a basic manual classification or listed in the alpha index but the classification containing the phraseology of N.O.C. contains common or similar businesses or industries it is intended that the operation be classified into the N.O.C. Code.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-360, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-360, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-360, filed 11/9/73, effective 1/1/74.]

WAC 296-17-370 Governing classification. The governing classification of a risk is defined as that classification, other than classifications 4806, 4904, 5206, 6301, 6302, 6303, 7101 or temporary help classifications 7104 through 7109, which carries the largest number of worker hours. Provided, that this rule is only applicable when multiple basic classifications are to be assigned to an employer's business undertakings.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-370, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-370, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-370, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-370, filed 11/9/73, effective 1/1/74.]

WAC 296-17-380 Single enterprise. If the employer's business, conducted at one or more locations, consists of a single operation or a number of separate operations which normally prevail in the business described by a single basic classification, that single classification which most accurately describes the entire enterprise shall be applied. Division of worker hours shall be made as provided hereinafter in respect to standard exceptions, general exclusions and special exceptions. No division of worker hours shall be permitted in respect to any other operation even though such operation may be specifically described by some other classification, unless the applicable classification phraseology or other manual provision specifically provides for such division of worker hours.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-380, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-380, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-380, filed 11/9/73, effective 1/1/74.]

WAC 296-17-390 Multiple enterprises. If an employer operates a secondary business within this state, an additional basic classification shall be assigned only if the following conditions exist:

(1) The secondary business does not normally prevail in the principal business undertaking of the employer.

(2) The secondary business is conducted as a separate undertaking or enterprise. This condition does not apply if the classification wording requires the assignment of an additional classification for specified employees or operations.

(3) Separate and distinct payroll records are maintained for each business undertaking.

(4) Each business is physically separated by structural partitions and is conducted without an interchange of labor.

(5) The assignment of the separate classification is not prohibited by the wording of the classification governing the principle business undertaking of the employer or any other classification assigned to the employer.

If all of the above conditions do not exist:

(a) All employees shall be assigned to the classification applicable to the principle business if the classification for the principle business carries a rate which is the same or higher than that for the classification of the secondary business.

(b) The secondary business shall be assigned to the classification which describes that business if such classification carries a rate higher than that applicable to the principal business.

(c) The principle business is the business with the greatest number of worker hours, excluding standard exception or general exclusion operations.

(6) Employers with more than one classification may have employees working in connection with several classifications. Payroll assignment for such employees is subject to WAC 296-17-410 "division of single employee's worker hours."

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-390, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-390, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-390, filed 11/9/73, effective 1/1/74.]

WAC 296-17-400 Mercantile operations. For mercantile operations the classification shall be separately determined for each separate location which is conducted as a separate enterprise without interchange of labor.

[Order 73-22, § 296-17-400, filed 11/9/73, effective 1/1/74.]

WAC 296-17-410 Division of single employee's worker hours. The worker hours of any one employee may be divided between two or more classifications, provided the employer has maintained complete and accurate records supported by original time cards or time book entries which show separately both by individual employee and in summary by operations performed the worker hours of such employees, except such division SHALL NOT BE ALLOWED:

(1) Between a basic classification and standard exception classification unless specifically provided for in other rules.

(2) Between two standard exception classifications.

(3) If the division is contrary to the classification phraseology.

If the employer fails to keep complete and accurate records as provided in this rule, the entire number of worker hours of the employee shall be assigned to the highest rated classification representing any part of their work. Division of worker hours by means of percentages, averages, estimates, or any basis other than specific time records, shall not be accepted by the department.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-410, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-410, filed 11/30/83, effective 1/1/84; Order 75-28, § 296-17-410, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-410, filed 11/9/73, effective 1/1/74.]

WAC 296-17-411 Classification for employees supporting separate operations. Employees who perform duties which support separate operations which are subject to different basic classifications are to be reported in accordance with the language of that classification, applicable to the operations supported, which carries the largest number of worker hours for the employer. For purposes of this rule, "duties which support separate operations" shall mean duties which remain the same and are performed at the same location(s) regardless of the operation being supported.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-411, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-411, filed 2/9/83.]

WAC 296-17-420 General inclusions. All of the basic classifications in this manual, other than standard exceptions, include certain operations which would be classified separately if they were run as separate business undertakings. These operations are referred to as general inclusions and are included in the scope of each basic classification. The following operations are included in all basic classifications unless they are specifically excluded by the language of the basic classification.

(1) Aircraft travel by employees, other than members of the flying crew.

(2) Commissaries and restaurants for the employers' employees. Provided that such operations conducted in connection with construction, erection, lumbering, or mining operations shall be assigned to Code 3905 "restaurants."

(3) Manufacture of containers, such as bags, barrels, bottles, boxes, cans, cartons, wooden pallets, or packing cases by the employers for use in their operations.

(4) Hospitals, medical facilities, or dispensaries operated by the employers for their employees.

(5) Printing, lithography, or similar operations of the employers when used exclusively for their own products.

(6) Maintenance or ordinary repair of the employer's building or equipment when performed by employees of the employer.

(7) Pick up and delivery when done by employees of the employer in connection with the business of the employer.

(8) Sales of all goods or products being manufactured by the employer.

(9) Warehousing, handling, packing, and shipping when done by an employee of the employer and done in connection with the business of the employer.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-420, filed 5/30/86, effective 7/1/86; 85-06-026 (Order 85-7), § 296-17-420, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-420, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-420, filed 11/9/73, effective 1/1/74.]

WAC 296-17-430 General exclusions. Some operations are so exceptional or unusual that they are excluded from the scope of all basic classifications. Such operations are referred to as general exclusions and are subject to the division of worker hours rules in all classifications including the standard exception classifications. The following operations are excluded from all basic classifications including the standard exception classifications unless they are specifically included.

(1) Aircraft operation – All operations of the flying and ground crews.

(2) Racing operations – All operations of the drivers and pit crews.

In addition to the above two listed exclusions, the following operations are similarly excluded from all basic classifications, provided that no division of these operations shall be permitted between the basic classifications assigned to cover these operations and any standard exception classifications.

(a) New construction or alterations by employees of the employer.

(b) Musicians and entertainers.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-430, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-430, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-430, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-430, filed 11/9/73, effective 1/1/74.]

WAC 296-17-440 Standard exceptions. The following employments referred to as standard exceptions are to be separately rated unless these employments are specifically included within the scope of a basic classification by use of words such as "including clerical office and outside sales." (Use of the words "clerical office" will also include draftsmen and use of the words "sales personnel" will also include collectors and messengers.) Provided that a division of a single employee's worker hours shall not be permitted between a standard exception classification and a basic business classification except as provided in the general exclusion rules of this manual.

The standard exceptions are defined below:

(1) Clerical office employees are defined as those employees whose duties are confined to keeping the books or records of the employer, or conducting correspondence or who are engaged wholly in office work where such books or records are kept or where such correspondence is conducted, having no other duty of any nature in or about the employer's premises. If any clerical office employee is exposed to any operative hazard of the business, their entire worker hours shall be assigned to the highest rated classification of work to which they are exposed. The clerical office classification shall be applied only to persons as herein described who are employed exclusively in separate buildings or on separate floors of buildings or in departments on such floors which are physically separated from all other work areas of the employer by structural partitions and within which no work is performed other than clerical office duties as defined in this paragraph.

(2) Draftsmen will be considered to be clerical office employees when their duties are limited to office work

only and who are engaged strictly as draftsmen in such a manner that they are not exposed to the operative hazard of the business. If any draftsman is exposed to any operative hazard of this business, their entire worker hours shall be assigned to the highest rated classification of work to which they are exposed.

(3) "Sales personnel – outside" are defined as those employees engaged in such duties away from the premises of the employer who sell or solicit new accounts or customers for the employer or who service existing accounts or customers for the employer. Provided that no employee shall be assigned to a sales classification code if their duties include delivery, even though they may also solicit or collect. Employees having delivery duties, even if they walk or use public transportation, shall be assigned to the governing classification of the employer.

(4) Messengers will be considered sales employees, provided the following conditions are met:

(a) The messenger is used solely by the employer in connection with the employer's business operation.

(b) The operation is not provided to the public as a general delivery service.

(c) The employer's basic classification does not include the standard exception classification designations.

(d) The employer's other assigned basic classifications are not that of a commercial or general delivery service, or similar business undertaking.

If all the above conditions do not exist, any employee assigned such duties shall be assigned to the governing classification of the employer when multiple basic classifications are assigned or to the basic classification in the event an employer has only a single basic classification assigned.

(5) Executive officers as defined in WAC 296-17-330.

With the exceptions of occupations falling within any classification that specifically includes clerical office, inside draftsmen or sales personnel, the following designated occupational classifications shall apply.

Classification 4904 clerical office employees including inside draftsmen.

Classification 6303 sales personnel, outside or away from the employers premises including collectors and messengers.

Classification 6301 automobile, truck, camper, trailer, mobile home, motorcycle and pleasure craft sales personnel.

Classification 6302 all door to door sales personnel.

Classification 7101 executive officers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-440, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-440, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-440, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-440, filed 11/9/73, effective 1/1/74.]

WAC 296-17-44001 Business described by a standard exception classification. If the principle business undertaking of an employer is described by a standard exception classification, the operations of all employees not included in the definition of the standard exception classification shall be assigned to the separate basic classification which most accurately describes their operations.

[Statutory Authority: RCW 51.16.035. 85-06-026 (Order 85-7), § 296-17-44001, filed 2/28/85, effective 4/1/85.]

WAC 296-17-441 Special exceptions. The following operations referred to as special exceptions are subject to division of worker hours in connection with all other classifications regardless of directional phrases beginning with "all employees" or "all operations," but only under the specific circumstances as shall be described by the following special exceptions:

(1) Security guards shall be subject to classification 6601 (WAC 296-17-723): *Provided*, The security guard is an employee of an employer engaged in logging or construction: *Provided further*, The security guard is for the purpose of guarding the employer's logging or construction sites: *And provided further*, The security guard is employed at the site only during those hours that the employer is not conducting any other operations at the site and provided any person employed as a security guard will have no other duties.

(2) Janitors shall be subject to classification 6602 (WAC 296-17-724): *Provided*, The janitorial services are performed solely within the employer's office: *Provided further*, The employer's other office employment is subject to classification 4904 (WAC 296-17-653) and provided the person employed to perform janitorial services is not otherwise regularly employed by the employer with clerical office duties that are subject to reporting under classification 4904.

(3) Logging truck drivers employed by logging companies shall be subject to classification 5003 (WAC 296-17-66001), provided this classification shall not apply to any logging truck driver for any work shift during which the driver has duties that would otherwise be subject to classification 5001 (WAC 296-17-659).

(4) Construction or erection contractors permanent yard or shop employees shall be subject to classification 5206 (WAC 296-17-675), provided that this classification shall not apply to any yard or shop employee during any work shift in which the yard or shop employee has duties subject to another classification, or if the classification assigned to the employer requires a separate treatment for shop operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-441, filed 11/27/85, effective 1/1/86; 80-17-016 (Order 80-23), § 296-17-441, filed 11/13/80, effective 1/1/81.]

WAC 296-17-450 Special agricultural classification interpretations. Farming in classifications 4802 through 4806, 4808, 4809, 4810, 4811, 7301, 7302, and 7307 will include farm labor by contractors and farm machinery operations by contractors.

To qualify for a separate rating of ground hand-picking or any other separation of agricultural classifications, separate and distinct payroll records of such operations will be required.

If a single establishment or work comprises more than one of classifications 4802 through 4806, 4808, 4809, 4810, 4811, 7301, 7302, and 7307 the premiums shall be

computed according to the payroll for operations of each classification. The department in its discretion may assess a single rate of premium for an agricultural establishment when a substantial portion of the operation falls within one classification, and in such cases, the entire operation will be required to be reported in such largest classification: *Provided,* That under no circumstances will the hand-picking classification (4806) apply for the purpose of single rating of an entire establishment engaged in other phases of agricultural activities. Provided further, that farm labor contractors shall be assigned the classification(s) applicable to the agricultural establishment for whom they are providing services.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-450, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-450, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-450, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-450, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-450, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-450, filed 11/27/74, effective 1/1/75; Order 74-29, § 296-17-450, filed 5/29/74, effective 7/1/74; Order 73-22, § 296-17-450, filed 11/9/73, effective 1/1/74.]

WAC 296-17-455 Special temporary help classification interpretation. For the purposes of administering the temporary help classifications 7104 through 7109, the term "temporary help" shall be given the same meaning as temporary service contractors defined in RCW 19.31.020(2) and shall mean any person, firm, association or corporation conducting a business which consists of employing individuals directly for the purpose of furnishing such individuals on a part-time or temporary help basis to others.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-455, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-455, filed 2/28/85, effective 4/1/85.]

WAC 296-17-460 Classification phraseology. (1) **N.O.C.** This expression is an abbreviation of the words "not otherwise classified." No classification so qualified shall be applied in any case where any other manual classification more accurately describes the enterprise or where the language of any manual classification so qualified prescribes other treatment.

(2) **Including.** If a classification carries a descriptive phrase "including" certain operations, division of worker hours shall not be made for such operations even though they may be specifically described by some other classification of this manual or may be conducted at a separate location.

(3) **All.** If a classification carries a descriptive phrase beginning with "all" as in the expression "all employees," "all other employees," "all operations," "all work to completion," division of worker hours shall not be made for any employees or operation (other than the standard exceptions, general exclusions or special exceptions), without regard to the location of such operations, except for an operation not incidental to and not usually associated with the enterprise described by such a classification.

(4) **Or.** The word "or" when used in the classification phraseology shall be understood to have the same meaning as though expressed "and/or."

(5) **And.** The word "and" when used in the classification phraseology shall be understood to have the same meaning as though expressed "and/or."

[Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-460, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-460, filed 11/9/73, effective 1/1/74.]

WAC 296-17-470 Penalty assessments for employers who fail to register under Title 51 RCW. Any employer who has failed to secure payment of compensation for their workers covered under this title will be liable, subject to RCW 51.48.100, to a maximum penalty in a sum of two hundred dollars or in a sum double the amount of premiums due for the four quarters prior to securing payment of compensation under this title, whichever is greater, for the benefit of the medical aid fund.

If an injury or occupational disease is sustained by a worker of an employer who has failed to secure payment of compensation under this title that employer may be liable for a penalty of not less than fifty percent nor more than one hundred percent of the cost of such injury or occupational disease.

For the purposes of this section only the cost of such claim will be determined as follows:

At the time the claim for benefits is filed and the employer is found to have failed to register with the department as required by RCW 51.16.110, a penalty in an amount equal to the average cost of such claim as determined by the nature of the injury or illness and the part of the body affected will be assessed for the benefit of the medical aid fund.

The first day of the seventh month after the date of receipt of the claim, the claim's status will be evaluated. If the claim is closed as of that date the paid loss value will be used as the cost of the claim. If the claim is still open as of that date, a case reserve value will be set and used as the cost of the claim.

If the initial penalty assessed is less than fifty percent of the cost of the claim an additional penalty will be assessed the employer to bring the penalty up to fifty percent. If the initial penalty assessed exceeds the cost of the claim, the difference between the cost of the claim and the initial penalty will be credited to employers account.

For the purposes of this section, no further adjustments or evaluation on the cost of the claim will be made.

[Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-470, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-470, filed 2/9/83.]

WAC 296-17-480 Penalty assessment for failure to keep records, or file quarterly reports and pay premiums under Title 51 RCW. Every employer who fails to keep the records required by Title 51 RCW or fails to make the reports and pay premiums provided in this title shall

be subject to a penalty of not to exceed two hundred percent of the quarterly premium for such offense.

Penalties for failure to make reports and pay premiums will be assessed according to the following schedule subject to RCW 51.48.100: In no case will the penalty be less than $10.00.

Days delinquent	Percent of premiums due
1 – 10	10%
11 – 20	15%
21 – 30	20%
31 – 40	25%
41 – 50	30%
51 – 60	35%
61 – 75	40%
76 – 90	45%
91 – 180	50%
181 – 270	75%
271 – 365	100%
366 – days and over	200%

In case of late report indicated "no payroll," a $10.00 penalty will be assessed.

Days delinquent will be computed by counting the number of calendar days elapsed since the quarter due date until and including the date report and payment were received by the department and then subtracting five days. It is the responsibility of the employer or employer's representative to prepare and send the required reports and payments allowing sufficient time for delivery by the United States mail or any other delivery service.

Approved payment plans entered into by the department and employers who fail to remit required premium payments will constitute good-faith intent to comply with the reporting requirements of Title 51 RCW and the received date of such payment agreement will be considered as the date the report and payment were received for purposes of computing days delinquent under this section. Approved payment plans under this section shall be subject to a penalty of not less than twenty-five percent of the outstanding premium balance, nor more than the percentage indicated in the above schedule for the number of days from the due date to the date of agreed payment.

Where the employer fails to keep records required by Title 51 RCW the quarterly premiums will be estimated by the department and penalties assessed according to the schedule outlined in this section.

[Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-480, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-480, filed 2/9/83.]

WAC 296-17-501 Classification 0101.

Airports, landing strips, runways and taxi ways, construction and repair

Alley and parking lot construction

Diking, N.O.C. including oil spill clean-up involving diking and/or ditching work

Excavation, N.O.C.

Grading, N.O.C. – including land leveling and grading of farm lands by contractor

Highway, street and road construction, N.O.C., includes operations such as grading, grubbing, clearing, surfacing, striping, guard rails, highway dividers, highway lighting and highway signs installation

Humus or peat digging – including humus or peat dealers

Land clearing, N.O.C. including slope grooming and forest trail construction, firefighting, and slash burning, N.O.C.

Parking lot striping

Pit, crusher and bunker operations in connection with road, street and highway construction

Railroads, construction, maintenance and repair, N.O.C., including dismantling

Retaining walls with road, street and highway construction, N.O.C.

Sand or gravel, or shale digging

Tunnels and approaches including lining, cofferdam work, shaft sinking, and well digging with caisson

This classification excludes bridge construction which is to be separately rated under risk classification 0201 (WAC 296-17-508) although such a structure may be constructed as a part of a highway, street or road construction project. This classification further excludes logging road construction rated under risk classification 6902 (WAC 296-17-747); railroad bridge construction rated under risk classification 0201 (WAC 296-17-508) "bridge construction"; log railroad construction rated under risk classification 6902 (WAC 296-17-747); and tunnels and approaches including lining, cofferdam work, shaft sinking and well digging with caisson done in connection with dam construction rated under risk classification 0701 (WAC 296-17-528).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-501, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-501, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-501, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-501, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-501, filed 11/30/76; Order 75-38, § 296-17-501, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-501, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-501, filed 11/9/73, effective 1/1/74.]

WAC 296-17-502 Classification 0102.

Concrete and asphalt construction, N.O.C. – including concrete sawing, drilling and pumping

Concrete culverts or other types with span of 12 feet or less

This classification will include house foundations and flatwork such as sidewalks and residential driveways but excludes concrete construction not residential in nature which will be rated under risk classification 0206 (WAC 296-17-50904) provided that concrete building construction will be rated under risk classification 0505 (WAC 296-17-520).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-502, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-502, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-502, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-502, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-502, filed 11/30/76; Order 73-22, § 296-17-502, filed 11/9/73, effective 1/1/74.]

WAC 296-17-503 Classification 0103.

Drilling, N.O.C.
Geophysical exploration, seismic detection of the mechanical properties of the earth
See construction classification applicable to work being done, for drilling done in connection with construction work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-503, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-503, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-503, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-503, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-503, filed 11/9/73, effective 1/1/74.]

WAC 296-17-504 Classification 0104.

Dredging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-504, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-504, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-504, filed 11/9/73, effective 1/1/74.]

WAC 296-17-505 Classification 0105.

Fence erection and/or repair—metal or wood.
Parking meter installation—report parking meter mechanism service and/or repair separately in risk classification 0606 (WAC 296-17-526), "vending or coin-operated machine service."
Placement of wire mesh on slopes for slope protection.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-505, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-505, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-505, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-505, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-505, filed 11/9/73, effective 1/1/74.]

WAC 296-17-506 Classification 0106.

Tree topping and pruning, N.O.C., includes spraying or fumigating in connection with tree topping, repairing or trimming.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-506, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-506, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-506, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-506, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50601 Classification 0107.

Coaxial cable and conduit underground construction, maintenance and repair – including use of automatic cable laying equipment and including television cable, N.O.C.
Pipelaying, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-50601, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-50601, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-50601, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50601, filed 11/30/79, effective 1/1/80.]

WAC 296-17-50602 Classification 0108.

Ditches and canals, N.O.C.
Sewer construction.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-50602, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-50602, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-50602, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-50602, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-50602, filed 11/30/79, effective 1/1/80.]

WAC 296-17-507 Classification 0109.

Reinforcing steel installation – placing for concrete construction
Reinforcing steel installation in connection with the construction of tunnels, cofferdams, caissons, dams, bridges, and steel erection shall be assigned to the classification describing the construction with which such reinforcing steel installation is connected.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-507, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-507, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-507, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-507, filed 11/9/73, effective 1/1/74.]

WAC 296-17-508 Classification 0201.

Bridge, trestle, overhead crossing, viaducts, construction, maintenance and repair including the foundations and approaches
Breakwater, jetty, levee, construction, maintenance and repair
Bulkhead retaining walls, construction, maintenance and repair, riprapping – all water hazard
Concrete culverts or other types over 12 feet
Undercrossings and approaches – including lining
Debris removal and other work with water hazard, N.O.C., will be rated under bulkhead construction with water hazard.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-508, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-508, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-508, filed 11/9/73, effective 1/1/74.]

WAC 296-17-509 Classification 0202.

Diving operations and subaqueous work, N.O.C.
Pile driving, concrete piles, N.O.C.
Wharf, pier, dock and marine railway, construction, maintenance and repair, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-509, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-509, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-509, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-509, filed 11/30/76; Order 73-22, § 296-17-509, filed 11/9/73, effective 1/1/74.]

WAC 296-17-50904 Classification 0206.

Commercial concrete construction such as sewage disposal, swimming pool, fish hatchery, water purification plant construction, and similar concrete projects

This classification will be used to report concrete construction projects other than concrete building construction rated in risk classification 0505 (WAC 296-17-520); concrete projects residential in nature which are rated in risk classification 0102 (WAC 296-17-502); highway, street, and road construction projects rated in risk classification 0101 (WAC 296-17-501); and bridge construction projects rated in risk classification 0201 (WAC 296-17-508).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-50904, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-50904, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-50904, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-50904, filed 11/29/82, effective 1/1/83.]

WAC 296-17-510 Classification 0301.

Agricultural irrigation pipe installation, service or repair

Agricultural sprinkler system installation, service or repair

Chemical spraying and fumigating

Landscape gardening

Landscaping and lawn yard care

Lawn-type sprinkler systems installation, service or repair

This classification includes sodding, seeding, planting, and related landscape work for the beautification of median strips and roadsides but excludes crop dusting by aircraft rated under risk classification 6903 (WAC 296-17-748) and ditches and canals rated under risk classification 0108 (WAC 296-17-50602).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-510, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-510, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-510, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-510, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-510, filed 11/30/76; Order 73-22, § 296-17-510, filed 11/9/73, effective 1/1/74.]

WAC 296-17-511 Classification 0302.

Brick and slate work, N.O.C.

Masonry, N.O.C., including chimney and fireplace construction

Plastering and stuccoing work – outside, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-511, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-511, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-511, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-511, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-511, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-511, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-511, filed 11/9/73, effective 1/1/74.]

WAC 296-17-512 Classification 0306.

Boilers, N.O.C., installation, service or repair including boiler scaling and tank erection within buildings

Plumbing, N.O.C.

Pump installation, service or repair, N.O.C.

Sewer pipe cleaning, including Roto Rooter or similar service providers

Side sewer installation (street to house hook ups) including service or repair

Sprinkler installation – automatic

Steam pipe, boiler, etc., covering insulation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-512, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-512, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-512, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-512, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-512, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-512, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-512, filed 11/9/73, effective 1/1/74.]

WAC 296-17-513 Classification 0307.

Ventilating, air conditioning and refrigeration systems, installation, service and repair, N.O.C.

Furnaces, installation, service and repair including duct work cleaning

Heating systems, installation, service and repair including solar heating systems

Wood stove installation excluding masonry work rated under risk classification 0302 (WAC 296-17-511)

See risk classification 3404 (WAC 296-17-582) for sheet metal shop work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-513, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-513, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-513, filed 11/9/73, effective 1/1/74.]

WAC 296-17-514 Classification 0401.

Cleaning, washing, sand blasting buildings, including shop operations

This classification excludes portable washing and cleaning operations rated under risk classification 6602 (WAC 296-17-724).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-514, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-514, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-514, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-514, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-514, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-514, filed 11/9/73, effective 1/1/74.]

WAC 296-17-515 Classification 0402.

Window cleaning

This classification excludes domestics, janitors and handymen regularly employed for other purposes, but will include the actual time of all workers employed by contract janitorial service companies while engaged in window washing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-515, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-515, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-515, filed 11/9/73, effective 1/1/74.]

WAC 296-17-516 Classification 0403.

Sign erection, painting, repair and maintenance or removal, including shop operations

Sign painting or lettering outside buildings or structures, N.O.C., including shop operations
Street and building decorating, hanging flags or bunting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-516, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-516, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-516, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-516, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-516, filed 11/9/73, effective 1/1/74.]

WAC 296-17-517 Classification 0502.

Rug, linoleum, tile and other types of floor or drainboard covering installation excluding hardwood floor installation rated under risk classification 0505 (WAC 296-17-520).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-517, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-517, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-517, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-517, filed 11/9/73, effective 1/1/74.]

WAC 296-17-518 Classification 0503.

Chimney cleaning - residential/commercial.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-518, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-518, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-518, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-518, filed 11/9/73, effective 1/1/74.]

WAC 296-17-519 Classification 0504.

Wallboard taping and texturing, excluding wallboard installation rated under risk classification 0505 (WAC 296-17-520)
Painting bridges, including incidental preparation work
Painting, decorating or paperhanging, N.O.C., including incidental preparation, including shop
Waterproofing, N.O.C. excludes roofing or subaqueous work
Painting, coating or cleaning oil or gas storage tanks and beer vats
Painting towers, smokestacks and steel or iron structures.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-519, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-519, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-519, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-519, filed 11/30/76; Order 73-22, § 296-17-519, filed 11/9/73, effective 1/1/74.]

WAC 296-17-520 Classification 0505.

Construction, erection, alteration or repair of buildings, N.O.C.
Gutters - installation, service or repair - on structures
Wallboard installation, plastering, stuccoing and lathing
Fixtures - cabinets, counters, drainboards, mantels, etc. installation
Weather strip installation
Hardwood floor installation and refinishing
Door, door frame, sash, overhead door, siding installation framing and carpentry, N.O.C.
Elevator door bucks - installation
Mobile home set up including installation of skirting and awnings by contractor. Excludes mobile home set up by mobile home dealer rated under risk classification 3401 (WAC 296-17-579)
Fire escapes and awnings - installation, erection, repair and removal outside buildings
Decorative metal shutters - installation, erection and removal - no buntings
Scaffolds, hod hoists, concrete and cement distributing towers, sidewalk bridges and construction elevators, installation or removal
Debris cleaning and removal and building clean-up after construction.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-520, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-520, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-520, filed 5/31/85; 83-24-017 (Order 83-36), § 296-17-520, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-520, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-520, filed 11/30/76; Order 75-38, § 296-17-520, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-520, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-520, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52001 Classification 0506.

Building raising or moving and underpinning
Wrecking or demolition of buildings.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52001, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52001, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52001, filed 11/29/82, effective 1/1/83.]

WAC 296-17-52002 Classification 0507.

Roofwork, all types, construction and repair
This classification excludes roof cleaning and moss removal rated under risk classification 6602 (WAC 296-17-724) not incidental to or part of a roofing contract.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52002, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52002, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52002, filed 11/29/82, effective 1/1/83.]

WAC 296-17-521 Classification 0508.

Blast furnace and metal burners construction
Crane or derrick installation
Elevated railway, tram, lift, etc., construction, maintenance and repair
Erection, maintenance and repair radio, television, water towers, poles and towers, N.O.C.
Exterior tanks - all types - erection
Oil still or refinery construction. Excludes plant maintenance by contractor rated under risk classification 0603 (WAC 296-17-524)
Smokestacks, structural iron or steel framework, erection, maintenance and repair
Windmills, all types, erection, maintenance and repair, silo erection
This classification includes erection of skeletons for pillars, posts and like columns, all excavations, foundation work, and dismantling and repairing of above types of structures.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-521, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-521, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-521, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-521, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-521, filed 11/30/76; Order 75-38, § 296-17-521, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-521, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-521, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52101 Classification 0509.

Overhead transmission, telephone, telegraph, and cable television lines, new construction or extension of lines, including poles or towers, erection, maintenance, repair by contractor.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52101, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-52101, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-52101, filed 11/29/82, effective 1/1/83.]

WAC 296-17-52102 Classification 0510.

Wood frame construction, erection, alteration, or repair – private residences, including dwellings up to four-plexes.

Wood frame construction, N.O.C.

This classification includes installation of fixtures, counters, drainboards, mantels, cabinets, and hardwood floors and placement of roof trusses; sheathing roofs, framing, siding, remodeling, and glazing where performed by speciality contractors in connection with projects subject to this classification.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52102, filed 11/27/85, effective 1/1/86.]

WAC 296-17-52103 Classification 0511.

Glass installation in buildings.

This classification includes installation of window/door glass, plastic, or similar materials; skylights, mirrors, storm windows, and window sashes in buildings and residences. Report installation of auto glass separately in risk classification 1108 (WAC 296-17-53805) glass merchants.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-52103, filed 5/30/86, effective 7/1/86.]

WAC 296-17-52104 Classification 0512.

Insulation and/or sound proofing materials installation, N.O.C.

This classification includes installation of weather strip and caulking, roof jacks, soffit ventilators, energy efficient doors and related carpentry work done in connection with the weatherization or retrofitting of buildings and residences. Report installation of windows separately in risk classification 0511 (WAC 296-17-52103) "glass installation—buildings" and energy auditors with no installation or delivery duties separately in risk classification 6303 (WAC 296-17-698) "outside sales—estimators."

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-52104, filed 5/30/86, effective 7/1/86.]

WAC 296-17-522 Classification 0601.

Electrical machinery and auxiliary apparatus installation and repair – including incidental wiring

Electrical wiring in buildings, and electrical wiring, N.O.C.

Erection of temporary floodlights – search light operation mounted on and generated by truck

Permanent flood lighting stadiums and parks

Television cable installation in buildings by contractor including drop line connection (pole to house hook-up).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-522, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-522, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-522, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-522, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-522, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-522, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-522, filed 11/9/73, effective 1/1/74.]

WAC 296-17-523 Classification 0602.

Elevator, freight or passenger, installation, service and repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-523, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-523, filed 11/9/73, effective 1/1/74.]

WAC 296-17-524 Classification 0603.

Dynamos, installation, service and repair including electrical generators and turbines

Engines and gas machines installation and belts, erection of shafting

Machinery installation, service and repair and millwright work, including installation and repair of escalator and conveyor systems, and commercial laundry equipment N.O.C.

This classification includes the dismantling of all the above types of machinery and will also include plant maintenance by contractor which will be rated as millwright work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-524, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-524, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-524, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-524, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-524, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-524, filed 11/9/73, effective 1/1/74.]

WAC 296-17-525 Classification 0604.

Battery salvaging

Iron or steel scrap dealers

Junk dealers

Metal scrap dealers – collect, sort and reduction of scrap metal.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-525, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-525, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-525, filed 11/9/73, effective 1/1/74.]

WAC 296-17-526 Classification 0606.

Operation and maintenance amusement devices, N.O.C., fire extinguisher sales and service

Vending or coin-operated machines, operation, installation maintenance and service, includes product preparation by vending company
This classification excludes honor snack food services which will be rated under risk classification 1101 (WAC 296-17-536) driver delivery sales, provided that in the event such an operation is conducted as a part of and in connection with an operation rated in this classification (0606), risk classification 0606 will be assigned to cover both operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-526, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-526, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-526, filed 11/9/73, effective 1/1/74.]

WAC 296-17-527 Classification 0607.

Advertising display service for stores within buildings
Drapes or curtain installation
Household appliances electrical installation, service and repair
Meat slicer or grinder installation, service and repair
Safes and vaults, installation and removal
Television antenna or satellite disc installation and repair
Venetian blinds and shades, installation
This classification will include installation, service and repair of radio and television receiving sets, two-way radio, car stereo systems and radio-television repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-527, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-527, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-527, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-527, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-527, filed 11/9/73, effective 1/1/74.]

WAC 296-17-52701 Classification 0608.

Business machine systems including computer mini and mainframe systems
Electrical alarm systems including smoke alarms
Intercom or audio call box
Telecommunication and PBX or similar equipment
Telephone service prewire by contractor
This classification includes installation, service or repair of the above types of equipment and includes all shop or yard operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-52701, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-52701, filed 2/28/85, effective 4/1/85.]

WAC 296-17-528 Classification 0701.

Dam construction, all operations in damsite area.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-528, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-528, filed 11/30/76; Order 73-22, § 296-17-528, filed 11/9/73, effective 1/1/74.]

WAC 296-17-529 Classification 0803.

Cities and towns, excluding municipal power and transit systems, law enforcement officers and fire fighters
This classification excludes clerical office, sales personnel and white collar employees rated under risk classification 5305 (WAC 296-17-678).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-529, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-529, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-529, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-529, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-529, filed 12/1/77; Order 75-38, § 296-17-529, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-529, filed 11/9/73, effective 1/1/74.]

WAC 296-17-530 Classification 0804.

Commercial production of sand, gravel and processing clay and stone products including rock crushing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-530, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-530, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-530, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-530, filed 11/9/73, effective 1/1/74.]

WAC 296-17-532 Classification 0901.

Commercial boat or ship building or repair, all types, including dismantling of boat or ship hulls
This classification includes all ship and yard operations
See risk classification 3606 (WAC 296-17-598) for pleasure craft/recreational boat building.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-532, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-532, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-532, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-532, filed 11/9/73, effective 1/1/74.]

WAC 296-17-534 Classification 1002.

Sawmills, operation and maintenance
This classification excludes operations conducted in the woods rated under risk classification 5001 (WAC 296-17-659) logging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-534, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-534, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-534, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-534, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-534, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-534, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-534, filed 11/30/76; Order 73-22, § 296-17-534, filed 11/9/73, effective 1/1/74.]

WAC 296-17-535 Classification 1003.

Creosote works, pile and pole treating - yard operations only
Pole yard
Masts and spars yards.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-535, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-535, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-535, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-535, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-535, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53501 Classification 1004.

Log storage and log sorting yards independent from logging operations rated under risk classification 5001 (WAC 296-17-659)

This classification does not include any log trucking operations that are outside of the log storage and log sorting yards.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53501, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53501, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-53501, filed 11/13/80, effective 1/1/81.]

WAC 296-17-53502 Classification 1005.

Shingle mills, operations and maintenance

Shake mills, operations and maintenance

This classification excludes operations conducted in the woods rated under risk classification 5001 (WAC 296-17-659) logging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53502, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53502, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-53502, filed 11/30/81, effective 1/1/82.]

WAC 296-17-53504 Classification 1007.

Lumber inspectors

Foresters, forest rangers, timber cruisers and surveyors

Log scaling and grading bureaus

Shingle and shake inspection and grading bureaus

Inspection and grading bureaus, N.O.C.

Geophysical exploration, N.O.C., no core drilling

Weather stations

Testing and inspecting of pipe lines – radiographers

Weigh scale attendants

Prospectors

X-raying by contractor at industrial plants or construction sites

Rainmaking – not by aircraft.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53504, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-53504, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53504, filed 11/29/82, effective 1/1/83.]

WAC 296-17-536 Classification 1101.

Anhydrous ammonia delivery

Armoured car service

Automobile delivery drive away, automobile repossessing

Computer tape/accounting records delivery service

Delivery by retail, wholesale, combined wholesale and retail stores and distributors, N.O.C.

Delivery companies, deliver parcels and packages, no bulk merchandise

Distribution of sample merchandise by vehicle

Driver delivery sales, N.O.C.

Drivers of sound trucks

News agents or distributors of magazines, periodicals and telephone books, no retail dealer

Route food services, excludes food preparation to be reported under risk classification 3905 (WAC 296-17-618)

Septic tank and cesspool cleaning, excludes installation or repair

Street sweeping, parking lot sweeping, portable chemical toilets servicing

Street vending vehicles.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-536, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-536, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-536, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-536, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-536, filed 11/30/81, effective 1/1/82; Order 77-27, § 296-17-536, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-536, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-536, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-536, filed 11/9/73, effective 1/1/74.]

WAC 296-17-537 Classification 1102.

Interstate and intrastate trucking including transport companies, express companies, freight hauling and trucking, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-537, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-537, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-537, filed 11/27/74, effective 1/1/75; Order 73-22, §296-17-537, filed 11/9/73, effective 1/1/74.]

WAC 296-17-538 Classification 1103.

Coal merchants, solid fuel yards, firewood dealers, excludes operations subject to risk classification 1004 (WAC 296-17-53501), risk classification 1702 (WAC 296-17-549), risk classification 1703 (WAC 296-17-550), risk classification 5001 (WAC 296-17-659)

Lumber yards, building material dealers, not done in connection with or incidental to a manufacturing or processing plant operation also excluding yard operations rated under risk classification 1002 (WAC 296-17-534)

Monument dealers, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-538, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-538, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-538, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-538, filed 11/9/73, effective 1/1/74.]

WAC 296-17-53801 Classification 1104.

Automobile or truck wrecking or dismantling

This classification includes over the counter sales of new or used parts and tow truck operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53801, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53801, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-53801, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53801, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53803 Classification 1106.

Rental stores N.O.C.

This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53803, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53803, filed 2/28/85, effective 4/1/85; 83-24-017

(Order 83-36), § 296-17-53803, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-53803, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53805 Classification 1108.

Auto glass merchants
Glass merchants – including bending, grinding, beveling, silvering or tempering of plate or sheet glass
Report installation of glass, mirrors, aluminum or wood window sashes or similar products away from the shop in risk classification 0511 (WAC 296-17-52103).

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-53805, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-53805, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-53805, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-53805, filed 11/29/82, effective 1/1/83.]

WAC 296-17-53806 Classification 1109.

Auto/truck towing companies.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-53806, filed 11/27/85, effective 1/1/86.]

WAC 296-17-539 Classification 1301.

Bridge tenders, electrically operated bridges, vehicular tunnels operation
Electric light and power cooperatives
Electric light and power plants, cities, towns and counties
Electric light and power public utility districts
Electric systems, N.O.C.
Steam heat and power plants
This classification includes extension of lines and meter readers when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); contractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings subject to risk classification 0601 (WAC 296-17-522).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-539, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-539, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-539, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-539, filed 11/9/73, effective 1/1/74.]

WAC 296-17-540 Classification 1303.

Telegraph companies, all other employees, operation and maintenance, extension of lines
Telephone companies, all other employees, operation and maintenance, extension of lines
This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); contractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings subject to risk classification 0608 (WAC 296-17-52701).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-540, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-540, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-540, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-540, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-540, filed 11/9/73, effective 1/1/74.]

WAC 296-17-541 Classification 1304.

Telephone companies, exchange operators, clerical office and sales personnel
Telegraph companies, clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-541, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-541, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-541, filed 11/9/73, effective 1/1/74.]

WAC 296-17-54101 Classification 1305.

Television cable companies, operation and maintenance, extension of lines all outside employments
This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in underground line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); contractors engaged in overhead line construction, maintenance or repair subject to risk classification 0509 (WAC 296-17-52101); and contractors engaged in wiring within buildings and telecable hookups within buildings subject to risk classification 0601 (WAC 296-17-522).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-54101, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-54101, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-54101, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-54101, filed 11/29/82, effective 1/1/83.]

WAC 296-17-542 Classification 1401.

Ambulance services including mobile medic and patient transport services
Taxicab companies
Chauffeurs, N.O.C. – commercial
Pilot cars
Escort service.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-542, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-542, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-542, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-542, filed 11/9/73, effective 1/1/74.]

WAC 296-17-544 Classification 1404.

Bus or limousine companies, transit systems, contract bus driving
Vessels, ferries, tugs and steamboats operation, N.O.C. including dock employees, not maritime.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-544, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-544, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-544, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-544, filed 11/9/73, effective 1/1/74.]

WAC 296-17-545 Classification 1501.

Counties and taxing districts, N.O.C., all other employees
Housing authorities, local public, all other employees including meter readers
Indian tribal councils, all other employees
This classification excludes hospital districts subject to risk classification 6105 (WAC 296-17-682); library districts,
museum districts and school districts subject to risk classifications 6103 (WAC 296-17-680) and 6104 (WAC 296-17-681); port districts subject to risk classification 4201 (WAC 296-17-629); public utility districts subject to risk classification 1301 (WAC 296-17-539) and 1507 (WAC 296-17-546); law enforcement officers subject to risk classification 6905 (WAC 296-17-750); and fire fighters subject to risk classification 6904 (WAC 296-17-749)
This classification also excludes clerical office and white collar employees.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-545, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-545, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-545, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-545, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-545, filed 12/1/77; Order 73-22, § 296-17-545, filed 11/9/73, effective 1/1/74.]

WAC 296-17-546 Classification 1507.

Irrigation ditches, operation, repair and maintenance when done by employees of firms subject to this classification
Waterworks including extension of lines and meter readers when done by employees of employers having operations subject to this classification
This classification excludes contractors engaged in waterline construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601); and contractors engaged in ditch or canal construction, maintenance or repair subject to risk classification 0108 (WAC 296-17-50602).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-546, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-546, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-546, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-546, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-546, filed 11/9/73, effective 1/1/74.]

WAC 296-17-548 Classification 1701.

Ore reduction, by wet or dry process without application of heat at mine.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-548, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-548, filed 11/9/73, effective 1/1/74.]

WAC 296-17-549 Classification 1702.

Coal mines, underground
Coke ovens
Mines, N.O.C., underground.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-549, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-549, filed 2/28/85, effective 4/1/85; Order 75-38, § 296-17-549, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-549, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-549, filed 11/9/73, effective 1/1/74.]

WAC 296-17-550 Classification 1703.

Open cut mining, all types
Placer or hydraulic mining.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-550, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-550, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-550, filed 11/9/73, effective 1/1/74.]

WAC 296-17-551 Classification 1704.

Quarries, N.O.C., includes stone crushing at quarry site
Stone cutting, quarry hazard.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-551, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-551, filed 11/9/73, effective 1/1/74.]

WAC 296-17-552 Classification 1801.

Smelting, sintering or refining lead, manufacturing calcium carbide
Blast furnace operation
Rolling mills steel or iron, rolling mills, N.O.C.
Lead works – sheet, tinfoil manufacturing
Lead manufacturing – red or white
Smelting, sintering or refining ores, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-552, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-552, filed 11/9/73, effective 1/1/74.]

WAC 296-17-555 Classification 2002.

Freight handlers – packing, handling or shipping merchandise N.O.C.
Refrigeration car, loading, unloading or icing
This classification also includes employees engaged in repackaging of goods from damaged containers.
This classification excludes drivers which are to be separately reported under risk classification 1102 (WAC 296-17-537).

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-555, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-555, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-555, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-555, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-555, filed 11/9/73, effective 1/1/74.]

WAC 296-17-556 Classification 2003.

Hide or leather dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-556, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-556, filed 11/9/73, effective 1/1/74.]

WAC 296-17-557 Classification 2004.

Iron or steel merchants, not junk or scrap dealers
This classification also includes wire rope and cable dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-557, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-557, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-557, filed 11/9/73, effective 1/1/74.]

WAC 296-17-558 Classification 2005.

Plumber and pipe supply dealers, wholesale or retail, gas, steam or hot water equipment.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-558, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-558, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-558, filed 11/9/73, effective 1/1/74.]

WAC 296-17-560 Classification 2007.

Grain elevator or warehouse
Bean or pea elevator or warehouse.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-560, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-560, filed 11/24/75, effective 1/1/76; 73-22, § 296-17-560, filed 11/9/73, effective 1/1/74.]

WAC 296-17-561 Classification 2008.

Warehouses–field bonded, including clerical office at such location
This classification excludes drivers which are to be separately rated under risk classification 1102 (WAC 296-17-537).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-561, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-561, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-561, filed 11/9/73, effective 1/1/74.]

WAC 296-17-562 Classification 2101.

Grain milling, feed mills, feed manufacture, including preparation of cereal or compound feeds for livestock
Hay, grain or feed dealers
Seed merchants including operation of seed sorting machinery.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-562, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-562, filed 11/9/73, effective 1/1/74.]

WAC 296-17-563 Classification 2102.

Anhydrous ammonia, fertilizer and agricultural chemical dealers. Drivers will be separately rated under risk classification 1101 (WAC 296-17-536) anhydrous ammonia delivery
Grocery, fruit or produce distributors, wholesale or combined wholesale and retail. Drivers will be separately rated under risk classification 1101 (WAC 296-17-536) delivery by combined wholesale and retail stores
Recycle, collection and receiving stations, and dealers of rags, bottles, paper and metal containers, N.O.C., no junk dealers. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.
Warehouses – general merchandise. Wholesale dealers to be separately rated. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.
Wool or cotton merchants. Drivers will be separately rated under risk classification 1102 (WAC 296-17-537) trucking, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-563, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-563, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-563, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-563, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-563, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-563, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-563, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-563, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-563, filed 11/9/73, effective 1/1/74.]

WAC 296-17-564 Classification 2104.

Fruit packing – fresh
Vegetable packing – fresh
This classification includes cold storage operations if it is conducted as a part of packing operations; if a separate distinct operation or business exists, it is to be separately rated
This classification excludes all canning or freezing operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-564, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-564, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-564, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-564, filed 11/9/73, effective 1/1/74.]

WAC 296-17-56401 Classification 2105.

Beer, ale, wine or soft drink importers, exporters and distributors, wholesale or combined wholesale and retail
This classification is not to be assigned if a business operation is already assigned to report operations subject to risk classification 3702 (WAC 296-17-600).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-56401, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-56401, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-56401, filed 11/30/81, effective 1/1/82.]

WAC 296-17-565 Classification 2201.

Laundries and dry cleaning establishments all operations including drop off stations operated by such establishments
Cleaning and dyeing
Use of this classification will be limited to establishments providing services primarily to retail walk in customers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-565, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-565, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-565, filed 11/9/73, effective 1/1/74.]

WAC 296-17-566 Classification 2202.

Carpet, rug and upholstery cleaning, shop or outside

Laundries – commercial or industrial, N.O.C., including linen, uniform and diaper service.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-566, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-566, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-566, filed 11/9/73, effective 1/1/74.]

WAC 296-17-567 Classification 2401.

Paper or pulp manufacturing, wood fibre manufacturing
Corrugated and fibre board container manufacturing, including corrugating and laminating of paper
Paper coating, corrugating, laminating or oiling
Paper goods, N.O.C., manufacturing
Building and roofing paper or felt preparation, no manufacturing felt.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-567, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-567, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-567, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-567, filed 11/9/73, effective 1/1/74.]

WAC 296-17-568 Classification 2903.

Assembly of other wood products from manufactured parts, N.O.C.
Box or shook, pallet, lath manufacturing, wood
Cabinet shop, barrel stock manufacturing and assembly
Coffin or casket manufacturing or assembly – wood
Counter tops manufacturing other than metal
Door, door frames or sash manufacturing – wood covered with metal
Excelsior, kindling wood, hog fuel, particle board, lumber remanufacturing including planing and molding operations
Fibre ware manufacturing, N.O.C.
Fishing pole manufacturing, wood, rattan or willow ware manufacturing
Furniture manufacturing, wood – including assembly
Pencil or furniture stock manufacturing
Pipe or tube manufacturing, wood only
Sash, door or assembled millwork manufacturing
Sawmill operations to be separately rated under risk classification 1002 (WAC 296-17-534). Veneer manufacture to be separately rated under risk classification 2904 (WAC 296-17-569)
Veneer products manufacturing
Wooden gun stock manufacturing, woodenware manufacturing, N.O.C.
Wood products manufacturing and assembly, N.O.C.
Physically separated upholstery departments of firms engaged in furniture, coffin or casket manufacturing, assembly, or finishing, may be separately rated under risk classification 3808 (WAC 296-17-612), and in accordance with WAC 296-17-410
This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification. This classification excludes all activities away from the shop or plant.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-568, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-568, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-568, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-568, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-568, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-568, filed 11/30/76; Order 75-38, § 296-17-568, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-568, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-568, filed 11/9/73, effective 1/1/74.]

WAC 296-17-569 Classification 2904.

Plywood manufacturing
Veneer, commercial production
This classification includes all types of veneer production.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-569, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-569, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-569, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-569, filed 11/9/73, effective 1/1/74.]

WAC 296-17-570 Classification 2906.

Pattern or model manufacturing, metal, plastic or wood
Piano or musical instrument manufacturing, not metal.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-570, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-570, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57002 Classification 2908.

Truck canopy manufacturing – shop only
Housing, residential, factory-built, shop only
Mobile homes, campers and travel trailers manufacturing – shop only.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-57002, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-57002, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-57002, filed 11/29/82, effective 1/1/83.]

WAC 296-17-571 Classification 3101.

Ready mix concrete dealers
This classification to include any miscellaneous operations made up of tools, equipment and building materials sales which is less than twenty-five percent of the dollar volume of ready mix concrete sales.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-571, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-571, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-571, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-571, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-571, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-571, filed 11/9/73, effective 1/1/74.]

WAC 296-17-572 Classification 3102.

Rock wool manufacturing, digging or quarrying to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-572, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-572, filed 11/9/73, effective 1/1/74.]

WAC 296-17-573 Classification 3103.

Cement manufacturing, lime manufacturing
Lightweight aggregate building or insulation material manufacturing

Perlite, pozzolan, magnesite or expanded shale aggregate manufacturing
Digging or quarrying to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-573, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-573, filed 11/9/73, effective 1/1/74.]

WAC 296-17-574 Classification 3104.

Plaster mills and whiting manufacturing, quarrying to be separately rated
Talc mills and emery works
Asbestos products manufacturing, including spinning or weaving, mica goods manufacturing
Soapstone or soapstone products manufacturing, marble cutting and polishing, slate milling
Stone cutting or polishing, N.O.C., away from quarry
Plasterboard or plaster block manufacturing
Asphalt works, grinding, pulverizing or mixing asphalt
Coating of building materials, N.O.C. – shop operations
Monument dealers who do stonecutting, engraving or sandblasting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-574, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-574, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-574, filed 11/30/76; Order 73-22, § 296-17-574, filed 11/9/73, effective 1/1/74.]

WAC 296-17-575 Classification 3105.

Concrete blocks, bricks, poles, piles, tile and beam manufacturing
Concrete sewer and irrigation pipes, concrete septic tanks and concrete products, N.O.C. manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-575, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-575, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-575, filed 11/9/73, effective 1/1/74.]

WAC 296-17-576 Classification 3301.

Fish canneries, fish freezing and processing, fish curing
Fish oil manufacturing
Marine life, nonedible, processing
Oyster, crab, clam, canning or cold packing
Sea foods products, N.O.C., canning or manufacturing
This classification excludes diving operations which will be separately rated under risk classification 0202 (WAC 296-17-509).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-576, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-576, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-576, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-576, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-576, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-576, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-576, filed 11/9/73, effective 1/1/74.]

WAC 296-17-57601 Classification 3302.

Meat, fish and poultry dealers, wholesale or combined wholesale/retail
Use of this classification is limited to employers engaged in selling fresh meat, fish and poultry who are not engaged in slaughter or packing house operation which are rated subject to risk classification 4301 (WAC 296-17-630).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-57601, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-57601, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57601, filed 11/27/78, effective 1/1/79.]

WAC 296-17-57602 Classification 3303.

Meat, fish and poultry dealers, retail
Use of this classification is limited to employers engaged in selling fresh meats, fish and poultry over the counter, by the pound to a retail consumer and who maintain show cases displaying fresh cuts of meat, fish and poultry available for sale by the pound to such consumers
This classification excludes custom meat cutting facilities licensed under chapter 16.49 RCW who are prohibited by law from selling fresh meat, fish and poultry by the pound to a retail customer which are subject to risk classification 4302 (WAC 296-17-631).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-57602, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-57602, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-57602, filed 11/27/78, effective 1/1/79.]

WAC 296-17-578 Classification 3309.

Motorcycle sales or rental agency, including repair
Pleasurecraft sales or rental agency, N.O.C., including repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-578, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-578, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-578, filed 11/9/73, effective 1/1/74.]

WAC 296-17-579 Classification 3401.

Automobile, truck, body and fender repair shops, including painting and incidental upholstery and glass repair
Automobile, truck, mobile home, camper, canopy, and trailer sales and/or rental agency, including repair shops
Automobile, truck, repair shops or garages
Automobile, truck service specialty shops including sales, installation and repair of air conditioning systems, electrical systems, cruise controls, mufflers, and sun roofs
Boat dealers, including repair shops
Marinas and boat house operations, including repair shops
This classification will include mobile home delivery and set up when done by employees of the mobile home sales agency. Contractors doing set up and delivery of mobile homes who are not employees of the mobile home sales agency will be rated under risk classification 0505 (WAC 296-17-520).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-579, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-579, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-579, filed 11/30/83, effective 1/1/84; 82-24-047

(Order 82-38), § 296-17-579, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-579, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-579, filed 11/9/73, effective 1/1/74.]

WAC 296-17-580 Classification 3402.

Abrasive wheel manufacturing
Air compressor manufacturing or assembly, elevator manufacturing, gear grinding or manufacturing
Automobile, truck, tractor radiator and heater core manufacturing and repair shops
Auto body manufacturing – truck, trailer, bus body manufacturing, travel trailer body repair
Auto or motorcycle manufacturing or assembly
Auto or truck engine manufacturing, aircraft engine manufacturing or rebuild, N.O.C.
Auto or truck parts, machining or rebuild not in vehicle
Battery manufacturing or assembly including repair
Bed spring or wire mattress manufacturing
Confectioners machinery manufacturing or assembly, food processing machinery manufacturing or assembly, precision machined parts, N.O.C., manufacturing
Coppersmithing, shop
Furnace, heater or radiator manufacturing
Heat treating metal
Lead burning, metal spraying – copper
Machinery manufacturing or assembly, N.O.C.
Machine shops, N.O.C., including mobile shops, tool sharpening and marine engine repair
Nut, bolt, screw, nail, tack, rivet, eyelet, spike and needle manufacturing, N.O.C.
Office machinery manufacturing or assembly, N.O.C., cash register and sewing machine manufacturing or assembly
Photo processing machinery manufacturing or assembly
Power saw, lawn and garden equipment and small motor repair, N.O.C.
Printing or bookbinding machinery manufacturing or assembly
Pump manufacturing or assembly, safe manufacturing or assembly, scale manufacturing or assembly including repair, auto jack manufacturing or assembly, water meter manufacturing or assembly including repair
Saw manufacturing or assembly
Sewing machine, commercial – repair and rebuild
Shoe machinery manufacturing or assembly, sprinkler head manufacturing or assembly, textile machinery manufacturing or assembly
Small arms, speedometer and carburetor manufacturing or assembly including rebuild
Tool manufacturing, machine finishing
Tool manufacturing, not hot forming or stamping, die manufacturing – ferrous
Valve manufacturing
Welding or cutting, N.O.C. including mobile operations
This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification. Unless outside activities are specifically provided for they are to be separately rated
This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations rated within this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-580, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-580, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-580, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-580, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-580, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-580, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-580, filed 11/30/76; Order 75-38, § 296-17-580, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-580, filed 11/9/73, effective 1/1/74.]

WAC 296-17-581 Classification 3403.

Aircraft manufacturing
For the purposes of this rule aircraft manufacturing means the original manufacture of such aircraft as distinguished from rebuilding, modifying, or converting existing aircraft and only applies to the production of units when completed that are capable of in air flight as distinguished from aircraft kits to be assembled by the purchaser and are not capable of air flight when sold
This classification includes clerical office and sales personnel and aircraft operations incidental to the manufacture such as test flights.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-581, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-581, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-581, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-581, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-581, filed 11/9/73, effective 1/1/74.]

WAC 296-17-582 Classification 3404.

Aluminum ware manufacturing – from sheet aluminum
Auto parts manufacturing or assembly N.O.C. – miscellaneous stamped parts
Awning manufacturing or assembly – metal
Brass or copper goods manufacturing
Cans manufacturing – aluminum or galvanized
Coffin–casket manufacturing or assembly, other than wood
Electric or gas lighting fixtures, lampshades or lantern manufacturing or assembly – metal
Furniture, bedstead, shower–door, showcases – not wood – manufacturing or assembly
Galvanized iron works, manufacturing – not structural
Hardware manufacturing, N.O.C.
Metal goods manufacturing, N.O.C., from material lighter than 9 gauge
Metal stamping, including plating and polishing
Sign manufacturing – metal
Ski manufacturing and toboggan manufacturing other than wood
Stove manufacturing, excluding wood stove manufacturing and other stoves made from material 9 gauge or

heavier rated under risk classification 5209 (WAC 296-17-67602)

Water heater manufacturing or assembly

Window, sash or door manufacturing or assembly – aluminum

Physically separate upholstery departments of firms engaged in furniture, coffin or casket manufacturing, assembly, or finishing may be separately rated under risk classification 3808 (WAC 296-17-612), and in accordance with WAC 296-17-410

This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification. Unless outside activities are specifically provided for they are to be separately rated

This classification includes the repair of items being manufactured or assembled when done by employees of an employer having operations rated in this classification when the repair is done as a part of and in connection with the manufacturing or assembly operation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-582, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-582, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-582, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-582, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-582, filed 11/13/80, effective 1/1/81; Order 75-38, § 296-17-582, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-582, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58201 Classification 3405.

Aircraft parts manufacturing, N.O.C.

For the purpose of this rule; aircraft parts means the component parts making the aircraft operative and becoming part of the aircraft when being manufactured by the aircraft manufacturing company

Provided that this classification will not be assigned to an employer who has operations rated in risk classification 3402 (WAC 296-17-580); risk classification 3404 (WAC 296-17-582); risk classification 3508 (WAC 296-17-592); or risk classification 5201 (WAC 296-17-670) unless such operations are conducted as a distinct and separate business undertaking and rated in accordance with WAC 296-17-390

This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-58201, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-58201, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-58201, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-58201, filed 11/27/78, effective 1/1/79.]

WAC 296-17-583 Classification 3406.

Automobile or truck car washes

Automobile or truck gas service stations, N.O.C.

Automobile or truck storage garages – no repair

This classification includes cashiers who receive payments from customers and excludes portable automobile or truck car washes subject to risk classification 6602 (WAC 296-17-724).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-583, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-583, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-583, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-583, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-583, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-583, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-583, filed 11/9/73, effective 1/1/74.]

WAC 296-17-584 Classification 3407.

Gas or oil dealers, wholesale or retail, including fuel oil, propane or butane

Asphalt, bitumen dealers

Oil refining–petroleum, including manufacturing of products obtained therefrom

Gasahol distilling or refining

Asphalt or tar, distilling or refining

Oil wells operation – oil or gas lease operators

Oil or gas wells – cementing

Oil or gas wells – specialty tool operation, N.O.C., by contractor

Oil or gas wells – installation or recovery of casing

Gas dealers, liquified petroleum gas, gas works, all operations

Oil or gas lease work, N.O.C. – by contractors–not lease operation

Oil or gas pipe line operation

Synthetic rubber manufacturing

Gasoline recovery from casing head or natural gas.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-584, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-584, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-584, filed 11/9/73, effective 1/1/74.]

WAC 296-17-585 Classification 3408.

Gas companies – natural gas including clerical office and sales personnel

This classification includes new construction and extension of lines when done by employees of employers having operations subject to this classification

This classification excludes contractors engaged in gas line construction, maintenance or repair subject to risk classification 0107 (WAC 296-17-50601).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-585, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-585, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-585, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-585, filed 11/9/73, effective 1/1/74.]

WAC 296-17-58501 Classification 3409.

Self service gas stations

This classification applies to service stations that are completely self service with no employees performing a direct service of any kind to customer's vehicle. Service stations providing direct services of any kind to a customers vehicle will be rated under risk classification 3406 (WAC 296-17-583) even though such

establishments may also have self service gas facilities.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-58501, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-58501, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-58501, filed 11/30/79, effective 1/1/80.]

WAC 296-17-586 Classification 3501.

Brick or clay products manufacturing, N.O.C.
Refractory products, fireproofing tile, flue lining and roofing tile manufacturing
Sewer tile, drainage tile and tile, N.O.C., manufacturing
Fireclay products manufacturing, foundry crucible
Briquettes manufacturing, peat fuel manufacturing
This classification does not apply to the production of raw materials for use in the manufacture of the above articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-586, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-586, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-586, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-586, filed 11/9/73, effective 1/1/74.]

WAC 296-17-587 Classification 3503.

Potteries, glazed or porcelain, earthenware manufacturing
Chinaware, tableware, decorative or architectural terra cotta manufacturing
Decorative tile, clay tobacco pipes, manufacturing
Glassware manufacturing, N.O.C. including stained or leaded glassware manufacturing
Glass manufacturing, N.O.C.
Plastic feather or flower manufacturing
Agate or enamel ware manufacturing
Plaster statuary or ornament manufacturing – relief map manufacturing
Phonograph record manufacturing
Mirror, glass sign manufacturing, etching or frosting glass
This classification does not apply to the production of raw materials for use in the manufacturing of the above articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-587, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-587, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-587, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-587, filed 11/9/73, effective 1/1/74.]

WAC 296-17-590 Classification 3506.

Crane, hoisting service and rigging contractors. This classification excludes operations incidental to risk classifications 0201 (WAC 296-17-508), 0202 (WAC 296-17-509), 0505 (WAC 296-17-520), 0506 (WAC 296-17-52001), 0507 (WAC 296-17-52002), 0508 (WAC 296-17-521), 0509 (WAC 296-17-52101), 0510 (WAC 296-17-52102), 0604 (WAC 296-17-525), 0701 (WAC 296-17-528) and 5001 (WAC 296-17-659).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-590, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-590, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-590, filed 11/9/73, effective 1/1/74.]

WAC 296-17-592 Classification 3508.

Plastic goods manufacturing, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-592, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-592, filed 11/9/73, effective 1/1/74.]

WAC 296-17-594 Classification 3602.

Camera manufacturing or assembly including repair in shop
Dental laboratories
Electrical cordset radio and ignition assembly
Electronic circuit board assembly, N.O.C.
Electronic products manufacturing; resistors, capacitors, chip and relays manufacturing
Fishing tackle manufacturing, N.O.C., including assembly
Incandescent lamp manufacturing, electric tube or transistor manufacturing
Instrument manufacturing, scientific, medical or professional
Jewelry manufacturing or engraving
Magnetic tape manufacturing
Motion picture projectors manufacturing or assembly including repair in shop
Silverware manufacturing, watch case manufacturing
Sound recording equipment, thermometer and steam gauge manufacturing
Stereo components manufacturing or assembly
Tag, button, zipper or fastener manufacturing, bottle cap manufacturing
Telegraph or radio apparatus manufacturing, N.O.C.
Telephone set manufacturing or repair, N.O.C.
Trophy engraving
Watch manufacturing
This is a shop or plant only classification although the classification allows for repair work when specified it is contemplated that such repairs are limited to those brought into the shop by the customer or sent through a common carrier. This classification excludes all outside repair work
This classification does not apply to the production of raw material for use in the manufacturing of the above articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-594, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-594, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-594, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-594, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-594, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-594, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-594, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-594, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-594, filed 11/9/73, effective 1/1/74.]

WAC 296-17-595 Classification 3603.

Furniture stripping and refinishing
Metal plating or polishing, rustproofing – acid bath, N.O.C.
Painting in shop, N.O.C.
Electroplating and detinning, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-595, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-595, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-595, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-595, filed 11/9/73, effective 1/1/74.]

WAC 296-17-596 Classification 3604.

Galvanizing or tinning – not electrolytic, N.O.C.
Retinning, rustproofing – galvanizing or hot bath, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-596, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-30), § 296-17-596, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-596, filed 11/9/73, effective 1/1/74.]

WAC 296-17-597 Classification 3605.

Truck manufacturing or assembling.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-597, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-597, filed 11/9/73, effective 1/1/74.]

WAC 296-17-598 Classification 3606.

Pleasure craft/recreational boat building or repair, all types, N.O.C.
This classification excludes boat building or repair rated under risk classification 0901 (WAC 296-17-532).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-598, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-598, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-598, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-598, filed 11/9/73, effective 1/1/74.]

WAC 296-17-599 Classification 3701.

Ammonia, nitrogen and ammonium nitrate manufacturing
Nitrate recovery from x-ray and photo films
Manufacturing dye and chemicals for tinting candles
Chemical manufacturing, N.O.C., by nitration, alkylation, oxidation, etc. process. This classification includes the manufacturing of chemicals involving, but not limited to, the following chemical processes: Nitration, alkylation, distillation, reduction, oxidation, sulphonation, compression of gasses, halogenation and amidation
Chemical mixing, blending and repackaging only – no manufacturing of ingredients
Cosmetics manufacturing, no manufacturing of ingredients
Drug, medicine or pharmaceutical preparation manufacturing, no manufacturing of ingredients
Oxygen or hydrogen manufacturing, acetylene gas or carbonic acid gas manufacturing
Alcohol manufacturing, distilling, N.O.C.
Polish, dressing, ink or mucilage manufacturing
Extract manufacturing, including distillation of essential oils
Perfumery manufacturing, including distillation of essential oils
Flavoring manufacturing, including distillation of essential oils
Mint distilling
Salt, borax or potash producing or refining
Serum, anti-toxin or virus manufacturing
Paint, varnish or lacquer manufacturing
Putty manufacturing, synthetic resin manufacturing
Acid manufacturing
Candle, crayon and paste manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-599, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-599, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-599, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-599, filed 11/27/78, effective 1/1/79; Order 74-40, § 296-17-599, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-599, filed 11/9/73, effective 1/1/74.]

WAC 296-17-600 Classification 3702.

Breweries or malt houses
Bottling – beverages, N.O.C.
Spiritous liquor manufacturing
Wine making
This classification includes tour guides and tasting room employees.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-600, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-600, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-600, filed 11/9/73, effective 1/1/74.]

WAC 296-17-603 Classification 3707.

Rubber boot manufacturing, rubber goods manufacturing, N.O.C.
Waterproofing cloth – rubber.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-603, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-603, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-603, filed 11/9/73, effective 1/1/74.]

WAC 296-17-604 Classification 3708.

Linoleum, oil cloth or imitation leather manufacturing
Broom and brush manufacturing, or assembly
Cordage, rope or twine manufacturing
Match manufacturing
Cotton cord or cotton twine manufacturing
Textile manufacturing, N.O.C.
Taxidermists and hide pelting
Parachutes, suspenders, fur goods and bandages manufacturing
Nylon or synthetic goods manufacturing, N.O.C.
Life preservers and canvas goods manufacturing, N.O.C.
Braid, net, plush and velvet, thread, webbing and yarn manufacturing
Spinning or weaving – natural or synthetic fibres, N.O.C.
Pillow, quilt or cushion manufacturing including stuffed animal or doll manufacturing
Mattress or box springs manufacturing – no manufacturing wire springs or excelsior
Abrasive cloth preparation
Bag or sack manufacturing or renovating – cotton, burlap, gunny, nylon, or textile
Carpet or rug manufacturing
Fire hose manufacturing from linen thread
Cotton batting, wadding or waste manufacturing
Felting manufacturing, shoddy manufacturing

Wool combing or scouring
Fishing rod wrappings, manufacturing
Awning, tent, sail, flags, wind socks or sleeping bag manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-604, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-604, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-604, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-604, filed 11/9/73, effective 1/1/74.]

WAC 296-17-605 Classification 3801.

Glove manufacturing, leather, belting manufacturing, leather
Leather goods manufacturing, N.O.C.
Boot or shoe manufacturing or repair, N.O.C.
Leather embossing
Shoe stock manufacturing, gasket manufacturing – not metal or asbestos.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-605, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-605, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-605, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-605, filed 11/9/73, effective 1/1/74.]

WAC 296-17-606 Classification 3802.

Lace, embroidery, cloth hats, umbrella and draperies manufacturing
Clothing or cloth goods manufacturing, N.O.C.
Gloves manufacturing, N.O.C.
Millinery manufacturing, artificial feather or flower manufacturing, N.O.C.
Wig making
Hosiery manufacturing
Fabric coating, impregnating or waterproofing, N.O.C., textiles bleaching, dyeing or finishing, new goods, not garments
Cloth printing
Dressmaking or tailoring.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-606, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-606, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-606, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-606, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-606, filed 11/9/73, effective 1/1/74.]

WAC 296-17-612 Classification 3808.

Upholstery – furniture, auto or boat.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-612, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 83-05-019 (Order 83-5), § 296-17-612, filed 2/9/83; Order 75-28, § 296-17-612, filed 8/29/75, effective 10/1/75; Order 73-22, § 296-17-612, filed 11/9/73, effective 1/1/74.]

WAC 296-17-614 Classification 3901.

Bakeries – retail
This classification applies only to those bakeries that sell products at retail primarily on the premises of the bakery and contemplates minimal delivery of products off premise such as delivery of wedding cakes.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-614, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-614, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-614, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-614, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-614, filed 11/9/73, effective 1/1/74.]

WAC 296-17-615 Classification 3902.

Fruit and vegetable cannery and freezer operations
Fruit and vegetable evaporating, preserving or dehydrating
Fruit syrup manufacturing, fruit juice manufacturing, jam or jelly manufacturing, cider manufacturing
Pea vining
Corn products, chocolate and cocoa manufacturing
Baking powder, dextrine, glucose, starch and yeast manufacturing
Nut shelling, egg breaking, coconut shredding and peanut handling
Food sundries manufacturing and food processing, N.O.C.
Peanut butter, honey, mayonnaise and instant potato manufacturing
Pickle manufacturing, sauerkraut manufacturing
Pet food manufacturing
Butter substitutes manufacturing
Breakfast food manufacturing
Poultry canning and canneries, N.O.C.
Vegetable oil manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-615, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-615, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-615, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-615, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-615, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-615, filed 11/9/73, effective 1/1/74.]

WAC 296-17-616 Classification 3903.

Sugar refining
Molasses manufacturing, syrup manufacturing, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-616, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-616, filed 11/9/73, effective 1/1/74.]

WAC 296-17-618 Classification 3905.

Cocktail and soft drink lounges
Commissaries and restaurants with construction, erection, logging or mine operations
Eating establishments, N.O.C., such as public lunch counters in stores, ice cream parlors, popcorn stores or stands, and retail candy stores with on premise manufacturing
Food, drink, candy, etc. concessionaires at parks, tracks and exhibitions including vending concessionaires dispensing food, drink, candy, etc. at ball parks, race tracks, theatres and exhibitions
Restaurants and taverns
This classification is not applicable to street vendors or route food services who shall be rated under class 1101 (WAC 296-17-536).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-618, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-618, filed 2/28/85, effective 4/1/85; 83-24-017 (Order

83-36), § 296-17-618, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-618, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-618, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-618, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-618, filed 11/9/73, effective 1/1/74.]

WAC 296-17-61801 Classification 3906.

Bakeries, cracker or potato chip manufacturing, N.O.C.
Confectionery and chewing gum manufacturing
Cough drop manufacturing
Macaroni manufacturing
Pizza manufacturing, N.O.C.
Ravioli or tamale manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-61801, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-61801, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-61801, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-61801, filed 11/30/79, effective 1/1/80.]

WAC 296-17-61804 Classification 3909.

Caterers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-61804, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-61804, filed 11/29/82, effective 1/1/83.]

WAC 296-17-619 Classification 4002.

Butter, cheese, ice cream and ice cream mix manufacturing
Condensed milk manufacturing
Creameries and dairies, operation
Dairy products manufacturing, N.O.C.
This classification does not include dairy or farming operations subject to risk classification 7301 (WAC 296-17-644).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-619, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-619, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-619, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-619, filed 11/9/73, effective 1/1/74.]

WAC 296-17-620 Classification 4101.

Printing, lithography, engraving, map printing, and silk screening, N.O.C.
Rubber stamp manufacturing and assembling
Bookbinding
Photoengraving
Linotype or hand composition
Electrotyping.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-620, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-620, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-620, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-620, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-620, filed 11/30/79, effective 1/1/80; Order 75-38, § 296-17-620, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-620, filed 11/9/73, effective 1/1/74.]

WAC 296-17-622 Classification 4103.

Newspaper publishing
This classification excludes:
Employees whose duties are limited to editing, designing, proofreading, photographic composition and clerical office will be rated under risk classification 4904 (WAC 296-17-653);
Outside reporters, advertising or circulation solicitors and photographers with no other duties will be rated under risk classification 6303 (WAC 296-17-698); and
Newspaper publishers with no printing operations will be governed by WAC 296-17-44001, business described by a standard exception classification.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-622, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-622, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-622, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-622, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-622, filed 11/9/73, effective 1/1/74.]

WAC 296-17-626 Classification 4107.

Business machine service, adjustment, or repair, N.O.C. This classification includes the installation of typewriters, adding machines and reproduction machines, either electric or manual, micro/mini computer systems and x-ray equipment but excludes the installation service or repair of computer main frame systems which will be rated under risk classification 0608 (WAC 296-17-52701)
Piano tuning.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-626, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-626, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-626, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-626, filed 11/9/73, effective 1/1/74.]

WAC 296-17-627 Classification 4108.

Letter service shops and mailing or addressing companies
This classification includes clerical office employees and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-627, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-627, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-627, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-627, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-627, filed 11/9/73, effective 1/1/74.]

WAC 296-17-628 Classification 4109.

Sign painting in shop
Sign painting or lettering inside buildings
This classification does not include painting done in connection with sign manufacturing rated under risk classification 2903 (WAC 296-17-568); risk classification 3404 (WAC 296-17-582); risk classification 3503 (WAC 296-17-587); or risk classification 3508 (WAC 296-17-592) or painting done in connection with sign repair rated under risk classification 0403 (WAC 296-17-516). Sign erection outside will be rated under risk classification 0403 (WAC 296-17-516).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-628, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-628, filed 2/28/85, effective 4/1/85; 83-24-017 (Order

83-36), § 296-17-628, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-628, filed 11/9/73, effective 1/1/74.]

WAC 296-17-629 Classification 4201.

Coal dock operation – by means of mechanical apparatus, including stevedoring
Longshoring and stevedoring
Port districts, including sales personnel
Stevedoring, by hand or hand truck exclusively, no hoisting of cargo
Stevedoring, loading and unloading ships designed for freight carrying containers
Stevedoring, N.O.C., supercargo checkers
Tallymen, checking clerks in connection with stevedoring work
Wharf and pier, operation
This classification includes employees engaged in mending and repacking of damaged containers in connection with stevedoring work.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-629, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-629, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-629, filed 11/9/73, effective 1/1/74.]

WAC 296-17-630 Classification 4301.

Fertilizer manufacturing
Glue manufacturing
Lard making or refining
Meat products manufacturing, including canning or dehydrating
Packing house – including butchering and handling livestock
Peat moss shredding and baling
Rendering works, N.O.C.
Sausage casings, wholesale dealer
Sausage manufacturing
Slaughter houses
Tallow making
Tanneries, fur manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-630, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-630, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-630, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-630, filed 11/30/76; Order 75-38, § 296-17-630, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-630, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-630, filed 11/9/73, effective 1/1/74.]

WAC 296-17-631 Classification 4302.

Custom meat cutting facilities as licensed under chapter 16.49 RCW including farm kill operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-631, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-631, filed 2/28/85, effective 4/1/85; Order 76-36, § 296-17-631, filed 11/30/76; Order 73-22, § 296-17-631, filed 11/9/73, effective 1/1/74.]

WAC 296-17-633 Classification 4304.

Feed lots
Stock yards, no slaughtering
Livestock auction and sales yards
Livestock buyers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-633, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-633, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-633, filed 11/9/73, effective 1/1/74.]

WAC 296-17-634 Classification 4305.

Garbage, refuse or ashes collecting
Garbage works, landfill, reduction or incineration including cashiers collecting fees from customers
Radioactive waste landfill.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-634, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-634, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-634, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-634, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-634, filed 11/9/73, effective 1/1/74.]

WAC 296-17-635 Classification 4401.

Cold storage plants, lockers operation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-635, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-635, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-635, filed 11/9/73, effective 1/1/74.]

WAC 296-17-63501 Classification 4402.

Ice manufacturing, artificial
Ice harvesting
Ice dealers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-63501, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-63501, filed 11/29/82, effective 1/1/83.]

WAC 296-17-636 Classification 4404.

Storage warehouse, cold.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-636, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-636, filed 11/9/73, effective 1/1/74.]

WAC 296-17-637 Classification 4501.

Radio or television broadcasting companies – transmitter or field employees outside, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-637, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-637, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-637, filed 11/9/73, effective 1/1/74.]

WAC 296-17-638 Classification 4502.

Radio broadcasting stations, all other employment including clerical office and sales personnel
Recording companies, studio including clerical office and sales personnel
Television broadcasting stations, all other employment including clerical office and sales personnel
Television cable companies, all other employment including clerical office and sales personnel
"All other employees" is limited to employees confined to the studio or office and includes control operators, announcers, players, entertainers or musicians.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-638, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-

7), § 296-17-638, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-638, filed 11/9/73, effective 1/1/74.]

WAC 296-17-640 Classification 4504.

Theatres all types

This classification includes managers, stage hands, box office employees, parking lot attendants, ushers, motion picture operators, snack bar employees, clerical office and sales personnel but excludes players, musicians or entertainers rated under risk classification 6605 (WAC 296-17-727).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-640, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-640, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-640, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-640, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-640, filed 11/9/73, effective 1/1/74.]

WAC 296-17-641 Classification 4601.

Fireworks manufacturing

Powder works manufacturing

Combined chemicals and explosives manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-641, filed 11/27/85, effective 1/1/86; Order 74-40, § 296-17-641, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-641, filed 11/9/73, effective 1/1/74.]

WAC 296-17-643 Classification 4802.

Berry farms

Bulb raising

Flower seed growing including harvesting of seeds

Picking of forest products, N.O.C.

Vegetable crops, such as bush beans, peas, sweet corn, potatoes, and field carrots which are mechanically harvested.

Vineyards including harvesting of fruit

This classification excludes fresh fruit packing operations rated under risk classification 2104 (WAC 296-17-564); and fruit cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615) unless specifically included by manual language.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-643, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-643, filed 5/31/85; 85-06-026 (Order 85-7), § 296-17-643, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-643, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-643, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-643, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-643, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-643, filed 11/9/73, effective 1/1/74.]

WAC 296-17-644 Classification 4803.

Farms, N.O.C.

Orchards – applies to all tree crops, deciduous and fruits, nuts, and shall include all acreage devoted to the raising of such crops

This classification includes operations incidental to the enterprises described above including harvesting of all crops. Provided that ground hand picking of prunes and nuts will be separately rated under risk classification 4806 (WAC 296-17-647) if the conditions stipulated in that risk classification are met

This classification excludes fresh fruit packing operations rated under risk classification 2104 (WAC 296-17-564); and fruit cannery or freezer operations or nut processing rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-644, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-644, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-644, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-644, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-644, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-644, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-644, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-644, filed 11/9/73, effective 1/1/74.]

WAC 296-17-645 Classification 4804.

Poultry raising, egg production and hatcheries

Egg grading, candling and packing

Fur bearing animals and rabbit raising

This classification applies to acreage devoted to the raising of poultry, rabbits and fur bearing animals.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-645, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-645, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-645, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-645, filed 11/9/73, effective 1/1/74.]

WAC 296-17-646 Classification 4805.

Nurseries, including greenhouse operations incidental thereto

This classification applies to all acreage devoted to nursery operations and including tree nurseries and sod growing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-646, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-646, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-646, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-646, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-646, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-646, filed 11/9/73, effective 1/1/74.]

WAC 296-17-647 Classification 4806.

Ground hand harvesting of berries, N.O.C.

For the purposes of this rule ground hand harvesting of berries means those crops which are harvested from the ground by hand by a worker either sitting, kneeling, bending, stooping or in a similar position or in the upright position when standing on the ground with no aid of ladders, stools or other climbing devices. This classification excludes all harvesting operations that employ or require the use of hand held cutting devices or tools or any mechanical picking or harvesting machinery including incidental pickers which may or may not follow behind such machinery and collect the harvested crops by hand.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-647, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-647, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-647, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-647, filed 11/30/76; Order 75-38, § 296-17-647, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-647, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-647, filed 11/9/73, effective 1/1/74.]

WAC 296-17-649 Classification 4808.

Alfalfa and clover seed growing
Field crops, N.O.C., including raising of all hay, cereal grains, sugar beets
Potato sorting and storage, N.O.C.
This classification applies to all operations incidental to the enterprises described above
This classification excludes grain milling operations rated under risk classification 2101 (WAC 296-17-562); fresh vegetable packing operations rated under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-649, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-649, filed 5/31/85; 85-06-026 (Order 85-7), § 296-17-649, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-649, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-649, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-649, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-649, filed 11/9/73, effective 1/1/74.]

WAC 296-17-64901 Classification 4809.

Greenhouses, N.O.C.
Flowers - field growing, excluding bulb raising rated in risk classification 4802 (WAC 296-17-643)
Mushroom raising
Sprouts raising
This classification excludes fresh vegetable packing operations rated under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-64901, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-64901, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-64901, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-64901, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-64901, filed 11/27/78, effective 1/1/79.]

WAC 296-17-64902 Classification 4810.

Farms - vegetables, N.O.C. including truck gardening for fresh market. This classification includes all ground preparation, growing husbandry and hand harvesting with the aid of a hand held cutting device such as a paring or cutting knife used in the harvest of broccoli or cauliflower and by hand alone as in the case of cucumbers.
Separately rate vegetable crops such as bush beans, peas, sweet corn, potatoes and field carrots which are mechanically harvested in risk classification 4802 (WAC 296-17-643)
"Field crops, N.O.C."; fresh vegetable packing operations rated under risk classification 2104 (WAC 296-17-564); and vegetable cannery or freezer operations rated under risk classification 3902 (WAC 296-17-615).

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-64902, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-64902, filed 11/27/85, effective 1/1/86.]

WAC 296-17-64903 Classification 4811.

Hop growing - including cultivating, picking, drying and baling hops and all other operations incidental to the enterprise described above.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-64903, filed 11/27/85, effective 1/1/86.]

WAC 296-17-64904 Classification 4812.

Fish and shellfish hatcheries including raising, egg production, grading, harvesting and shipping
This classification excludes fish and shellfish processing which is to be separately rated subject to risk classification 3301 (WAC 296-17-576).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-64904, filed 11/27/85, effective 1/1/86.]

WAC 296-17-650 Classification 4901.

Consulting engineering and architectural firms, N.O.C.
Geologists, N.O.C.
Lease buyers performing work similar to oil geologists
Oil or gas geologists or scouts.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-650, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-650, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-650, filed 11/29/82, effective 1/1/83; Order 75-38, § 296-17-650, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-650, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-650, filed 11/9/73, effective 1/1/74.]

WAC 296-17-651 Classification 4902.

State government - use of this classification is limited to clerical office, sales personnel and professional white collar employees that have no field exposure, law enforcement powers, or provide patient health care. For the purposes of this rule field exposure is defined as anything other than the normal travel to a work assignment such as a field auditor or social worker would encounter
This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government. See risk classifications 4906 (WAC 296-17-655), 5307 (WAC 296-17-67901), 7103 (WAC 296-17-756) and 7201 (WAC 296-17-763) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-651, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-651, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-651, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-651, filed 11/30/79, effective 1/1/80; Order 73-22, § 296-17-651, filed 11/9/73, effective 1/1/74.]

WAC 296-17-652 Classification 4903.

Marine appraising
Boiler inspecting, N.O.C.
Elevator inspecting, no service
Inspection for insurance or valuation.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-652, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-

30), § 296-17-652, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-652, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-652, filed 11/9/73, effective 1/1/74.]

WAC 296-17-653 Classification 4904.

Clerical office, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-653, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-653, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-653, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-653, filed 11/9/73, effective 1/1/74.]

WAC 296-17-654 Classification 4905.

Apartment houses
Building and property management
Hotels
Motels
This classification excludes restaurant and lounge employees rated under risk classification 3905 (WAC 296-17-618). Hotel and motel desk clerks with no other duties will be rated under risk classification 4904 (WAC 296-17-653) clerical office N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-654, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-654, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-654, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-654, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-654, filed 11/30/76; Order 73-22, § 296-17-654, filed 11/9/73, effective 1/1/74.]

WAC 296-17-655 Classification 4906.

Academic and nonacademic employees of institutions of higher learning
This classification includes clerical office, sales personnel and white collar employees.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-655, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-655, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-655, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-655, filed 11/9/73, effective 1/1/74.]

WAC 296-17-656 Classification 4907.

Inmates employed in prison industries.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-656, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-656, filed 11/9/73, effective 1/1/74.]

WAC 296-17-657 Classification 4908.

Inmates of adult honor camps.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-657, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-657, filed 11/9/73, effective 1/1/74.]

WAC 296-17-658 Classification 4909.

Inmates of juvenile forest camps.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-658, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-658, filed 11/9/73, effective 1/1/74.]

WAC 296-17-659 Classification 5001.

Firewood cutting – all woods operations
Logging, N.O.C.
Sawmill operations conducted in the woods in connection with logging operations
Shake, shingle bolt and post cutting – all woods operations
For the purposes of this rule, logging, N.O.C. shall be considered the complete operation, including such activities as falling and bucking, skidding, yarding, loading, and maintenance of equipment except as otherwise provided and aircraft operations incident thereto
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-659, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-659, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-659, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-659, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-659, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-659, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-659, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-659, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-659, filed 11/9/73, effective 1/1/74.]

WAC 296-17-660 Classification 5002.

Booming and rafting logs.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-660, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-660, filed 11/9/73, effective 1/1/74.]

WAC 296-17-66001 Classification 5003.

Log hauling by contractor
Log truck drivers, N.O.C.
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-66001, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-66001, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-66001, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-66001, filed 11/27/78, effective 1/1/79.]

WAC 296-17-66002 Classification 5004.

Tree planting and precommercial tree thinning—forestry type operations
This classification excludes all operations subject to risk classification 5001 (WAC 296-17-659) logging, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-66002, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-66002, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-66002, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-66002, filed 11/30/81, effective 1/1/82.]

WAC 296-17-661 Classification 5101.

Metal ejection molding
Pipe or tube manufacturing, iron or steel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-661, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-661, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-661, filed 11/9/73, effective 1/1/74.]

WAC 296-17-662 Classification 5102.

Foundries iron, N.O.C., sandblasting shop
Furnace, radiator manufacturing, cast
Enameled iron ware manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-662, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-662, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-662, filed 11/9/73, effective 1/1/74.]

WAC 296-17-663 Classification 5103.

Foundries, steel castings
Type foundries, die casting manufacturing, nonferrous
Foundries, magnesium.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-663, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-663, filed 11/9/73, effective 1/1/74.]

WAC 296-17-666 Classification 5106.

Blacksmithing, spring manufacturing, not wire spring, auto bumper manufacturing
Tool forging, hot forming or stamping
Forging works, drop or machine
Chain manufacturing, forged.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-666, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-666, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-666, filed 11/9/73, effective 1/1/74.]

WAC 296-17-668 Classification 5108.

Cable or wire rope drawing and manufacturing
Cable or wire rope manufacturing, no drawing
Cable or wire insulation or covering.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-668, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-668, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-668, filed 11/9/73, effective 1/1/74.]

WAC 296-17-669 Classification 5109.

Heavy arms manufacturing or repair
Heavy machinery and equipment manufacturing or repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-669, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-669, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-669, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-669, filed 11/13/80, effective 1/1/81; Order 75-38, § 296-17-669, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-669, filed 11/9/73, effective 1/1/74.]

WAC 296-17-670 Classification 5201.

Electric motors, generators, alternators, starters, convertors, solenoids and servomotors manufacturing or assembly including repair
Electric power or transmission equipment manufacturing or assembly
Electrical toasters, frying pans, and wire harnesses manufacturing or assembly
Vacuum cleaners and electrical appliances manufacturing or assembly, N.O.C.
This classification contemplates the manufacturing or repair of transformers, switchboards, circuit breakers, switches or switchboard apparatus, power switching devices or systems, power invertors or similar equipment but excludes installation or service
This is a shop or plant only classification, all outside activities are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-670, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-670, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-670, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-670, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-670, filed 11/9/73, effective 1/1/74.]

WAC 296-17-673 Classification 5204.

Railroad car manufacturing or repair
Railroad car wheel manufacturing or repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-673, filed 11/27/85, effective 1/1/86; Order 75-38, § 296-17-673, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-673, filed 11/9/73, effective 1/1/74.]

WAC 296-17-675 Classification 5206.

Construction or erection contractors permanent yard or shop for maintenance or storage of firm's equipment or material
This classification is applicable only to a permanent yard or shop maintained by the employer for the storage of material, or the storage and maintenance of equipment. This classification is applicable only to those employees regularly assigned to the shop or yard, and whose duties are solely incidental to the storage, repair or maintenance of the employer's equipment or material. No employee having any other duties during their shift or work day will be rated in this classification.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-675, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-675, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-675, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-675, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-675, filed 11/27/78, effective 1/1/79; Order 76-36, § 296-17-675, filed 11/30/76; Order 73-22, § 296-17-675, filed 11/9/73, effective 1/1/74.]

WAC 296-17-676 Classification 5207.

Bowling alleys
Skating rinks – ice or roller
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-676, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-676, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-676, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-676, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67601 Classification 5208.

Brass, bronze, iron-ornamental – shop fabricating, assembly and manufacturing
Iron or steel works, shop, fabricate or assemble structural iron or steel
Iron works – shop – fabricate, assemble or manufacture nonstructural iron or steel

Iron works – shop – manufacturing railings, staircases, fire escapes, etc.
This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification
Unless outside activities are specifically provided for they are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67601, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67601, filed 2/28/85, effective 4/1/85; 82-24-047 (Order 82-38), § 296-17-67601, filed 11/29/82, effective 1/1/83.]

WAC 296-17-67602 Classification 5209.

Boilermaking, tank building (shop)
Metal goods manufacturing, N.O.C., from material 9 gauge or heavier
Wood stove manufacturing
This is a shop or plant only classification but does contemplate work being performed in an adjacent yard when operated by an employer having operations subject to this classification
Unless outside activities are specifically provided for they are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67602, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67602, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-67602, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-67602, filed 11/29/82, effective 1/1/83.]

WAC 296-17-677 Classification 5301.

Accounting or bookkeeping firms
Computer software or word processing services
Court reporting firms
Credit bureaus
Employment agencies
Law firms
Management analyst or consulting firms, N.O.C.
Secretarial or telephone answering services
Temporary help agencies – administrative offices only
Travel agencies
This classification includes clerical office and sales personnel
Use of this classification is limited to employers engaged in such services being provided to the general public. This is a services only classification and does not include retailing or store operations, nor is this classification to be assigned to employers setting up separate business operation to manage other commonly owned or operated business undertakings unless coincidentally the other operations are also subject to this classification.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-677, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-677, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-677, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-677, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-677, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-677, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-677, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-677, filed 11/9/73, effective 1/1/74.]

WAC 296-17-678 Classification 5305.

Clerical office, sales personnel and white collar employees of cities and towns.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-678, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-678, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-678, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-678, filed 11/9/73, effective 1/1/74.]

WAC 296-17-679 Classification 5306.

Clerical office, sales personnel and white collar employees of county and taxing districts, N.O.C.
Clerical office, sales personnel and white collar employees of Indian tribal councils.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-679, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-679, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-679, filed 11/9/73, effective 1/1/74.]

WAC 296-17-67901 Classification 5307.

State government, N.O.C.
For the purpose of this rule, this classification will include any state employee performing manual labor, supervising a work crew performing manual labor such as custodial or maintenance, construction, and machinery or equipment operators or professional white collar employments such as engineers, safety inspectors, biologists who have field exposures
This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government
See risk classifications 4902 (WAC 296-17-651), 4906 (WAC 296-17-655), 7201 (WAC 296-17-763), and 7103 (WAC 296-17-756) for other state employees.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-67901, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-67901, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-67901, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-67901, filed 11/30/79, effective 1/1/80.]

WAC 296-17-680 Classification 6103.

Churches
Day nurseries or child care centers – private
Day nurseries or child care centers – public
Libraries, N.O.C.
Museums, N.O.C.
Schools, N.O.C. including dance, modeling, music and flight instructions classroom only
Schools, private – academic
Schools, public – academic
Schools, trade or vocational
Use of this classification is limited to clerical office, sales personnel and white collar professional employees
See risk classification 6104 (WAC 296-17-681) for other operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-680, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-680, filed 2/28/85, effective 4/1/85; 83-24-017 (Order

83-36), § 296-17-680, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-680, filed 11/9/73, effective 1/1/74.]

WAC 296-17-681 Classification 6104.

Churches
Day nurseries or child care centers – private
Day nurseries or child care centers – public
Libraries, N.O.C.
Museums, N.O.C.
Schools, N.O.C. including dance, modeling, music
Schools, private – academic
Schools, public – academic
Schools, trade or vocational
All other employments, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-681, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-681, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-681, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-681, filed 11/9/73, effective 1/1/74.]

WAC 296-17-682 Classification 6105.

Home health services
Hospitals – N.O.C. including hospital districts
Hospitals – private proprietary
Hospitals – religious, charitable or nonprofit
Nursing care, N.O.C.
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-682, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-682, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-682, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-682, filed 11/27/78, effective 1/1/79; Order 73-22, § 296-17-682, filed 11/9/73, effective 1/1/74.]

WAC 296-17-684 Classification 6107.

Veterinary hospitals or clinics
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-684, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-684, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-684, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-684, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-684, filed 11/9/73, effective 1/1/74.]

WAC 296-17-685 Classification 6108.

Convalescent or nursing homes
Homes for the aged
Rest homes
This classification includes nursing care for the residents.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-685, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-685, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-685, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-685, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-685, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-685, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-685, filed 11/9/73, effective 1/1/74.]

WAC 296-17-686 Classification 6109.

Child preparatory classes
Chiropractors, N.O.C.
Dental clinics, N.O.C.
Dentists, N.O.C.
Medical clinics, N.O.C.
Naturopaths, N.O.C.
Optometrists, N.O.C.
Osteopaths, N.O.C.
Physical therapists, N.O.C.
Physicians and surgeons, N.O.C.
Podiatrists, N.O.C.
Psychologists and psychiatrists, N.O.C.
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-686, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-686, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-686, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-686, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-686, filed 11/9/73, effective 1/1/74.]

WAC 296-17-687 Classification 6201.

Crematoriums
Funeral directors – mortuaries
This classification excludes cemetery operations rated under risk classification 6202 (WAC 296-17-688).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-687, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-687, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-687, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-687, filed 11/9/73, effective 1/1/74.]

WAC 296-17-688 Classification 6202.

Cemeteries.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-688, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-688, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-688, filed 11/9/73, effective 1/1/74.]

WAC 296-17-689 Classification 6203.

Boys or girls clubs
Excludes camp operations
YMCA/YWCA institutions
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-689, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-689, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-689, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-689, filed 11/30/81, effective 1/1/82; Order 75-38, § 296-17-689, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-689, filed 11/9/73, effective 1/1/74.]

WAC 296-17-690 Classification 6204.

Baths or saunas, N.O.C.
Exercise or health institutes
Gymnasiums
Health clubs
Massage parlors
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-690, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-690, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-690, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-690, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-690, filed 11/9/73, effective 1/1/74.]

WAC 296-17-691 Classification 6205.

Beach clubs, N.O.C.
Clubs, N.O.C.
Fraternal clubs
Social clubs
Tennis clubs
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-691, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-691, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-691, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-691, filed 11/9/73, effective 1/1/74.]

WAC 296-17-692 Classification 6206.

Country clubs
Fishing clubs
Golf clubs
Golf courses, N.O.C., not miniature golf
Ski clubs
Swimming clubs – including swimming instructors
Yachting clubs
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-692, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-692, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-692, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-692, filed 11/9/73, effective 1/1/74.]

WAC 296-17-693 Classification 6207.

Carnivals: Amusement rides and concessions, traveling. This classification includes drivers and all employees engaged in the set up and tear down of all mechanical and nonmechanical rides, concession booths, or stands (i.e., game, food, souvenir, etc.), mobile offices, aid rooms, ticket booths, and all other temporary structures associated with a traveling carnival. Report carnival operations (i.e., ride operators, ticket takers and sellers, cooks, traveling clerical, game attendants, etc.) separately in risk classification 6208 (WAC 296-17-694) "carnival operations." Report winter quartering and permanent yard or shop operations separately in risk classification 5206 (WAC 296-17-675) "contractors permanent yard."

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-693, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-693, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-693, filed 2/28/85, effective 4/1/85; Order 77-27, § 296-17-693, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-693, filed 11/9/73, effective 1/1/74.]

WAC 296-17-694 Classification 6208.

Amusement parks
Carnival operations, N.O.C.
Caves or caverns operation for exhibition purposes – including rides, ticket sellers, gate attendants
Concessions – boats in parks
Fairs
Kiddie rides – permanent locations
Miniature golf courses
Race tracks, excluding parimutuel clerks and cashiers with no other duties which will be rated under risk classification 4904 (WAC 296-17-653) clerical office, N.O.C.
Ranges – archery, ball, dart, golf
Shooting galleries, air rifle – no firearms
Shooting ranges – firearms
Shows – animal
Shows – flower, art
This classification includes food and beverage operations and care, custody and maintenance of the above facilities.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-694, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-694, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-694, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-694, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-694, filed 11/30/76; Order 73-22, § 296-17-694, filed 11/9/73, effective 1/1/74.]

WAC 296-17-695 Classification 6209.

Bath houses – beach
Boy/Girl Scout Council camp employees
Camp operations, recreational or educational, N.O.C.
Church camps
Dude ranches – not cattle ranches
Resorts or camp grounds
Swimming pools – public
Trailer/mobile home parks or camps
YMCA/YWCA camp employees
This classification includes food and beverage operations, clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-695, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-695, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-695, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-695, filed 11/30/81, effective 1/1/82; Order 76-36, § 296-17-695, filed 11/30/76; Order 73-22, § 296-17-695, filed 11/9/73, effective 1/1/74.]

WAC 296-17-696 Classification 6301.

Automobile sales personnel
Camper sales personnel
Driving school instructors
Motorcycle sales personnel
Pleasurecraft sales personnel – no aircraft
Trailer or mobile home sales personnel
Truck sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-696, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-696, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-696, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-696, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-696, filed 11/9/73, effective 1/1/74.]

WAC 296-17-697 Classification 6302.

Book sales personnel

Coffee, tea, grocery sales personnel
Cosmetics sales personnel
Door to door sales personnel, N.O.C.
Household furnishings sales personnel
Magazine sales personnel
Vacuum cleaner sales personnel
Wearing apparel sales personnel
This classification is for door to door sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-697, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-697, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-697, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-697, filed 11/9/73, effective 1/1/74.]

WAC 296-17-698 Classification 6303.

Collectors, messengers, counsellors, N.O.C.
Farm machinery sales personnel – outside
Insurance sales personnel and claims adjustors – outside
Machinery sales personnel – outside – construction, mining, heavy equipment
Sales personnel, N.O.C. – outside.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-698, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-698, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-698, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-698, filed 11/30/79, effective 1/1/80; Order 76-36, § 296-17-698, filed 11/30/76; Order 73-22, § 296-17-698, filed 11/9/73, effective 1/1/74.]

WAC 296-17-699 Classification 6304.

Department stores
This classification includes clerical office and sales personnel and installation of household furnishings such as lamps, pictures, draperies or curtains etc.
This classification excludes automotive repair and service and other outside installation or construction.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-699, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-699, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-699, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-699, filed 11/9/73, effective 1/1/74.]

WAC 296-17-700 Classification 6305.

Clothing stores – retail
Concessions for hat and coat checking
Dry goods stores – retail
Shoe stores – retail
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-700, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-700, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-700, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-700, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-700, filed 11/9/73, effective 1/1/74.]

WAC 296-17-701 Classification 6306.

Appliance stores wholesale/retail excluding second hand appliance stores which will be rated in risk classification 0607 (WAC 296-17-527) household appliances service and repair
Furniture rental stores
Furniture stores wholesale/retail
Office furniture stores – wholesale/retail
Piano or organ stores, N.O.C., wholesale/retail
This classification will include installation of household furnishings, household floor coverings, and household appliances including incidental service and repair of household appliances
This classification excludes contract installation which for the purposes of this rule shall mean the bidding and ultimate furnishing to a purchaser such items listed in this classification that are specially ordered from others (i.e., factories, manufacturers, brokers, etc.) to fulfill the terms of the contract.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-701, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-701, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-701, filed 11/30/83, effective 1/1/84; Order 76-36, § 296-17-701, filed 11/30/76; Order 75-38, § 296-17-701, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-701, filed 11/9/73, effective 1/1/74.]

WAC 296-17-703 Classification 6308.

Clock and watch stores – wholesale/retail
Hearing-aid stores – wholesale/retail
Jewelry stores – wholesale/retail
Optical stores, no lens grinding – wholesale/retail
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-703, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-703, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-703, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-703, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-703, filed 11/9/73, effective 1/1/74.]

WAC 296-17-704 Classification 6309.

Automobile, truck, motorcycle accessory or replacement parts stores, wholesale/retail – excluding repairs
Bicycle stores – wholesale/retail, including repairs
Custom picture or u-frame stores – wholesale/retail, including repairs
Electrical hardware dealers – wholesale/retail, excluding repairs
Garden supply stores – wholesale/retail, excluding repairs
Gun stores – wholesale/retail, including repairs
Hardware stores – wholesale/retail, excluding repairs
Locksmiths, including repairs but excluding installation of dead bolt locks or similar activities which will be rated in risk classification 0505 (WAC 296-17-520) fixture installation
Stained art glass stores – wholesale/retail, excluding manufacturing
Wood stove and accessory stores – wholesale/retail excluding installations or repairs
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-704, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-704, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-704, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-704, filed 11/29/82, effective 1/1/83; Order 76-36, § 296-17-704, filed 11/30/76; Order 75-38, § 296-17-704,

filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-704, filed 11/9/73, effective 1/1/74.]

WAC 296-17-706 Classification 6402.

Grocery stores with fresh meat counters, combined – retail
This classification includes clerical office and sales personnel
Lunch counters and restaurant operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-706, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-706, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-706, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-706, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-706, filed 11/9/73, effective 1/1/74.]

WAC 296-17-707 Classification 6403.

Coffee, tea or spice stores – retail
Dairy products stores – retail
Delicatessens – retail, no fresh meat
Fruit or vegetable stores – retail
Grocery stores – retail, N.O.C.
This classification includes clerical office and sales personnel
Lunch counters and restaurant operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-707, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-707, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-707, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-707, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-707, filed 11/9/73, effective 1/1/74.]

WAC 296-17-708 Classification 6404.

Florists stores wholesale/retail
Balloon arrangement stores wholesale/retail
Christmas tree sales – from lot/retail only
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-708, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-708, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-708, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-708, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-708, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-708, filed 11/9/73, effective 1/1/74.]

WAC 296-17-709 Classification 6405.

Tire manufacturing, vulcanizing, rebuilding and/or recapping
Tire sales and service, wholesale and retail including incidental mechanical repair work to automobiles or trucks.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-709, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-709, filed 2/28/85, effective 4/1/85; Order 75-38, § 296-17-709, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-709, filed 11/9/73, effective 1/1/74.]

WAC 296-17-710 Classification 6406.

Book, record, video stores – retail
Camera/photo supplies stores – retail
Candy, cigarette and tobacco stores – retail
Coin and stamp stores – retail
Coin operated arcades, excluding repair rated under risk classification 0606 (WAC 296-17-526)
Drug stores – retail
Dry cleaning – coin operated self service
Fabric and yardage stores, yarn and needle work stores – retail
Floor covering stores, carpet sample stores, retail – excluding installation which will be rated in risk classification 0502 (WAC 296-17-517)
Laundromats, coin operated self service
Microwave oven and stereo component stores – retail
Musical instrument stores – retail, excluding piano or organ stores which will be rated in risk classification 6306 (WAC 296-17-701)
News butchers or news/magazine stands – retail
Office stationery stores, and office machinery stores including microcomputer and copy machines excluding repair
Paint/wallpaper stores – retail
Pawn shops
Pet shops – retail including incidental pet grooming
Private mailbox, safety deposit box or computer tape storage facilities
Retail stores, N.O.C.
Sewing machine stores – retail
Sporting goods stores – retail
Telephone stores – retail
Variety and five and ten cent stores – retail
Wine stores and retail liquor agencies; soft drink stores
This classification includes clerical office and sales personnel, but excludes all on premise manufacturing of any kind, delivery drivers, outside installation, lunch counters and restaurant operations which are to be separately rated.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-710, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-710, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-710, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-710, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-710, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-710, filed 11/30/77, effective 1/1/78; Order 75-38, § 296-17-710, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-710, filed 11/9/73, effective 1/1/74.]

WAC 296-17-711 Classification 6407.

Barber and beauty supply houses
Clothing, wearing apparel or dry goods stores – wholesale
Drug stores wholesale
Mill supply dealers
Paint and wallpaper dealers – wholesale
Stores, combined wholesale and retail, N.O.C.
Welding supply dealers
Wholesale stores, N.O.C.
This classification excludes drivers which are to be separately rated under risk classification 1101 (WAC 296-17-536), delivery by combined wholesale and retail stores.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-711, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-

7), § 296-17-711, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-711, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-711, filed 11/9/73, effective 1/1/74.]

WAC 296-17-712 Classification 6408.

Farm machinery/equipment dealers
Farm machinery rental dealers
This classification includes demonstration of machinery or equipment and repair without regard to location. All other operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-712, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-712, filed 11/30/83, effective 1/1/84; Order 74-40, § 296-17-712, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-712, filed 11/9/73, effective 1/1/74.]

WAC 296-17-713 Classification 6409.

Machinery/equipment dealers, N.O.C.
Machinery rental dealers, N.O.C.
Oil or gas well supplies or equipment dealers
This classification includes demonstration of machinery or equipment and repair without regard to location. All other operations to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-713, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-713, filed 11/30/83, effective 1/1/84; 80-17-016 (Order 80-23), § 296-17-713, filed 11/13/80, effective 1/1/81; Order 74-40, § 296-17-713, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-713, filed 11/9/73, effective 1/1/74.]

WAC 296-17-714 Classification 6501.

Barber shops
Beauty parlors
Cosmetologists and electrolysis studios
Sun tanning parlors
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-714, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-714, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-714, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-714, filed 11/9/73, effective 1/1/74.]

WAC 296-17-715 Classification 6502.

Banks
Credit unions
Financial institutions, N.O.C.
Investment companies
Loan companies
Mortgage companies
Savings and loan associations
Stock brokers and escrow companies
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-715, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-715, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-715, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-715, filed 11/9/73, effective 1/1/74.]

WAC 296-17-716 Classification 6503.

Labor unions or employee representative associations
This classification includes all employees including any official representatives.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-716, filed 11/27/85, effective 1/1/86; 85-12-024 (Order 85-11), § 296-17-716, filed 5/31/85; 83-24-017 (Order 83-36), § 296-17-716, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-716, filed 11/24/75, effective 1/1/76; Order 73-22, § 296-17-716, filed 11/9/73, effective 1/1/74.]

WAC 296-17-717 Classification 6504.

Stores – welfare – such as Goodwill or Salvation Army
This classification includes clerical office and sales personnel and collecting, conditioning and resale of donated used household articles.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-717, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-717, filed 2/28/85, effective 4/1/85; 81-24-042 (Order 81-30), § 296-17-717, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-717, filed 11/9/73, effective 1/1/74.]

WAC 296-17-718 Classification 6505.

Welfare special works program
Use of this classification will be limited to nonprofit organizations that administer special training block grant moneys which are used to provide eligible unemployable candidates work experience. "Work experience" for the purpose of this rule shall mean activities performed under direct and close supervision for a limited period of time, usually less than six months, wages or remuneration for which is paid by the referring or sponsoring organization without reimbursement from the person or entity in whose workplace the activities are performed.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-718, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-718, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-718, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-718, filed 11/9/73, effective 1/1/74.]

WAC 296-17-719 Classification 6506.

Film exchanges – commercial type movie theatre films excluding video cassettes which are to be separately rated
Film print shops including developing and printing
Microfilming
Photograph studios including outside photographers
This classification includes clerical office and sales personnel but excludes drivers which are to be separately rated under risk classification 1101 (WAC 296-17-536), delivery by combined wholesale and retail stores.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-719, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-719, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-719, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-719, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-719, filed 11/9/73, effective 1/1/74.]

WAC 296-17-721 Classification 6508.

Chore services
Domestic servants employed in or outside private residences of homeowners.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-721, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-721, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-721, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-721, filed 11/30/81, effective 1/1/82; Order 73-22, § 296-17-721, filed 11/9/73, effective 1/1/74.]

WAC 296-17-722 Classification 6509.

Boarding homes and centers, N.O.C.
Boarding houses
Foster homes
Fraternity houses
Orphanages
Rooming houses
Sorority houses.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-722, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-722, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-722, filed 11/9/73, effective 1/1/74.]

WAC 296-17-723 Classification 6601.

Detective agencies
Merchant police or patrol
Security guard agencies
Security guard at logging or construction sites as allowed for in WAC 296-17-441(1).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-723, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-723, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-723, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-723, filed 11/30/77, effective 1/1/78; Order 73-22, § 296-17-723, filed 11/9/73, effective 1/1/74.]

WAC 296-17-724 Classification 6602.

Janitorial service – excluding contract window cleaning
Janitors, N.O.C.
Kitchen exhaust, smoke hood cleaning
Pest control. This category applies to operations involved in the control and extermination of pests by the use of pesticides, rodenticides and fumigants
Portable cleaning and washing, N.O.C. – includes auto and truck washing, recreational vehicles and mobile homes. This category will include roof cleaning and washing of single story buildings, but only if the washing is not incidental to painting or roof repair
Swimming pool cleaning
Termite control. This category applies to operations involved in the control and extermination of termites and other wood-destroying pests or organisms by fumigation or spraying of poisonous insecticides. Does not include structural repair.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-724, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-724, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-724, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-724, filed 11/29/82, effective 1/1/83; Order 73-22, § 296-17-724, filed 11/9/73, effective 1/1/74.]

WAC 296-17-725 Classification 6603.

Auction sales, all types, excluding livestock auctions and sales yards rated in risk classification 4304 (WAC 296-17-633)
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-725, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-725, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-725, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-725, filed 11/9/73, effective 1/1/74.]

WAC 296-17-726 Classification 6604.

Lens manufacturing – ground and polished lenses
Optical goods manufacturing, N.O.C.
Telescope manufacturing – with lens grinding
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-726, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-726, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-726, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-726, filed 11/9/73, effective 1/1/74.]

WAC 296-17-727 Classification 6605.

Dance halls – all employment
Entertainers, N.O.C.
Musician, N.O.C.
Players, entertainers and musicians hired by theatres, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-727, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-727, filed 2/28/85, effective 4/1/85; Order 77-27, § 296-17-727, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-727, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-727, filed 11/9/73, effective 1/1/74.]

WAC 296-17-729 Classification 6607.

Billiard halls
Card rooms and bingo parlors
Recreational, social and community centers, N.O.C.
This classification includes food and beverage operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-729, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-729, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-729, filed 11/9/73, effective 1/1/74.]

WAC 296-17-730 Classification 6608.

Motion picture production
This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-730, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-730, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-730, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-730, filed 11/9/73, effective 1/1/74.]

WAC 296-17-731 Classification 6609.

Stables, stablemen and exercise boys
Riding academies or clubs
Jockeys, horseshoeing and horse training, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-731, filed 11/27/85, effective 1/1/86; 81-24-042 (Order 81-

30), § 296-17-731, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-731, filed 11/13/80, effective 1/1/81; Order 73-22, § 296-17-731, filed 11/9/73, effective 1/1/74.]

WAC 296-17-735 Classification 6704.

Parking lot operations including attendants or monitors.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-735, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-735, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-735, filed 11/9/73, effective 1/1/74.]

WAC 296-17-736 Classification 6705.

Athletic officials for amateur sports, N.O.C., such as umpires, and referees

Excursions – outdoor recreational N.O.C., includes river rides, pack trains, hiking and mountaineering, and including camping operations incidental thereto

Ski tows, ski patrols and ski instructors – includes operations incidental to the operation of the skiing facility such as parking lots but excludes food service operations, hotel or motel operations, ski rental or ski sales shops

Wind sail board instructors.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-736, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-736, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-736, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-736, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-736, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-736, filed 11/13/80, effective 1/1/81; Order 77-27, § 296-17-736, filed 11/30/77, effective 1/1/78; Order 74-40, § 296-17-736, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-736, filed 11/9/73, effective 1/1/74.]

WAC 296-17-737 Classification 6706.

Athletic teams – operation of premises and care of teams

All employees other than players, umpires, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-737, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-737, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-737, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-737, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-737, filed 11/9/73, effective 1/1/74.]

WAC 296-17-738 Classification 6707.

Football teams, N.O.C.

Hockey teams

Roller derbies

Contact sports, N.O.C.

This classification applies to professional contact sports and includes umpires, referees, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-738, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-738, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-738, filed 11/30/79, effective 1/1/80; Order 74-40, § 296-17-738, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-738, filed 11/9/73, effective 1/1/74.]

WAC 296-17-739 Classification 6708.

Jockeys, racing

Professional racing drivers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-739, filed 11/27/85, effective 1/1/86; Order 77-10, § 296-17-739, filed 5/31/77; Order 74-40, § 296-17-739, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-739, filed 11/9/73, effective 1/1/74.]

WAC 296-17-740 Classification 6709.

Sheltered workshops

This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-740, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-740, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-740, filed 11/30/83, effective 1/1/84; Order 73-22, § 296-17-740, filed 11/9/73, effective 1/1/74.]

WAC 296-17-741 Classification 6801.

Airlines, scheduled

All members of flying crew.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-741, filed 11/27/85, effective 1/1/86; Order 73-22, § 296-17-741, filed 11/9/73, effective 1/1/74.]

WAC 296-17-742 Classification 6802.

Airlines, scheduled

All ground crew operations including ticket sellers who handle baggage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-742, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-742, filed 2/28/85, effective 4/1/85; Order 73-22, § 296-17-742, filed 11/9/73, effective 1/1/74.]

WAC 296-17-743 Classification 6803.

Aircraft operations, N.O.C. – all members of flying crew

Flight instruction

Private aircraft – transportation of personnel in conduct of employer's business. The rule governing standard exceptions does not apply here

Nonscheduled airlines – flight crew members.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-743, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-743, filed 11/30/76; Order 73-22, § 296-17-743, filed 11/9/73, effective 1/1/74.]

WAC 296-17-744 Classification 6804.

Aircraft companies, sales or service agencies – including aircraft sales personnel

Aircraft ground crew operations, N.O.C.

Airport operations

Aircraft remanufacturing and/or rebuilding including modifications, conversions and repairs by firms not engaged in the original manufacturing of such aircraft

Nonscheduled airlines – ground crew operations including ticket sellers who handle baggage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-744, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-744, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-744, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-744, filed 11/24/75, effective 1/1/76; 73-22, § 296-17-744, filed 11/9/73, effective 1/1/74.]

WAC 296-17-745 Classification 6809.

Baseball teams
Basketball teams
Soccer teams
Noncontact sports, N.O.C.
This classification applies to professional noncontact sports and includes umpires, referees, coaches and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-745, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-745, filed 11/30/83, effective 1/1/84; Order 77-10, § 296-17-745, filed 5/31/77; Order 74-40, § 296-17-745, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-745, filed 11/9/73, effective 1/1/74.]

WAC 296-17-746 Classification 6901.

Volunteers
This classification includes all volunteers performing services for any state agency, municipal corporation, political subdivision, or private nonprofit charitable organization
This classification excludes volunteer law enforcement officers which are to be separately rated.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-746, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-746, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-746, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-746, filed 12/1/77; Order 75-28, § 296-17-746, filed 8/29/75, effective 10/1/75.]

WAC 296-17-747 Classification 6902.

Logging railroad construction or maintenance
Logging road construction or maintenance
For the purposes of this rule logging roads are roads for which the primary or initial usage is for the transporting of logs by truck or rail and includes roads constructed on public lands in connection with timber sales or logging, such as roads being constructed in accordance with the state department of natural resources or the United States Forest Service timber sales
This classification includes grading, grubbing, clearing of right-of-way and including culverts and bridges, but excludes falling, bucking of right-of-way timber or any of the other logging activities as enumerated under risk classification 5001 (WAC 296-17-659)
See risk classification 5206 (WAC 296-17-675) for permanent yard operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-747, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-747, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-747, filed 11/30/83, effective 1/1/84; Order 75-38, § 296-17-747, filed 11/24/75, effective 1/1/76.]

WAC 296-17-748 Classification 6903.

Aerial spraying, seeding, crop dusting, firefighting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-748, filed 11/27/85, effective 1/1/86; Order 76-36, § 296-17-748, filed 11/30/76.]

WAC 296-17-749 Classification 6904.

Fire fighters – salaried fire fighters of municipal fire departments.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-749, filed 11/27/85, effective 1/1/86; Order 77-27, § 296-17-749, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-749, filed 12/1/77.]

WAC 296-17-750 Classification 6905.

Law enforcement officers – law enforcement officers of cities, towns, counties or Indian tribal councils
This classification includes volunteer law enforcement officers, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-750, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-750, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-750, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-750, filed 12/1/77.]

WAC 296-17-751 Classification 6906.

Volunteer law enforcement officers
This classification includes volunteer law enforcement officers in accordance with RCW 51.12.035.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-751, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-751, filed 11/30/83, effective 1/1/84; Order 77-27, § 296-17-751, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-751, filed 12/1/77.]

WAC 296-17-752 Classification 6907.

Household furnishings moving and storage.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-752, filed 11/27/85, effective 1/1/86; Order 77-27, § 296-17-752, filed 11/30/77, effective 1/1/78.]

WAC 296-17-753 Classification 6908.

Carbon paper, crepe paper and typewriter ribbon manufacturing
Envelope or stationery manufacturing
Paper box manufacturing, folding paper boxes
Paper box manufacturing, solid paper boxes
Paper or plastic bag, abrasive paper and wallpaper manufacturing.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-753, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-753, filed 2/28/85, effective 4/1/85. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-753, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-17-753, filed 11/30/77, effective 1/1/78.]

WAC 296-17-75301 Classification 6909.

Medical laboratories
Blood banks
Assaying laboratories
Laboratories—Analytical, testing, or quality control for others, including outside operations, excluding outside x-raying and drilling.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-75301, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-75301, filed 11/27/78, effective 1/1/79.]

WAC 296-17-754 Classification 7101.

Executive officers, N.O.C.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-754, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-754, filed 11/27/78, effective 1/1/79.]

WAC 296-17-755 Classification 7102.

Football teams

This classification applies to football teams which are participants in the National Football League and includes umpires, referees, coaches, and managers.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-755, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-755, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-755, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-755, filed 11/30/79, effective 1/1/80.]

WAC 296-17-756 Classification 7103.

State government, this classification is to be used to report all workers who have law enforcement powers although such workers are professional white collar employees

This classification includes all departments, agencies, boards, commissions and committees of either the executive, legislative or judicial branches of state government, including employees having arrest powers or such other powers common to law enforcement, such as state patrol, wildlife agents, guards or correctional officers of inmates, fishery patrol officers, lottery officers

See risk classifications 4902 (WAC 296-17-651), 5307 (WAC 296-17-67901), and 7201 (WAC 296-17-763) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-756, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-756, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-756, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-756, filed 11/30/79, effective 1/1/80.]

WAC 296-17-757 Classification 7104.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature enumerated in this manual as being subject to any of the following risk classifications: 1304 (WAC 296-17-541), 4901 (WAC 296-17-650), 4902 (WAC 296-17-651), 4903 (WAC 296-17-652), 4904 (WAC 296-17-653), 4906 (WAC 296-17-655), 5301 (WAC 296-17-677), 5305 (WAC 296-17-678), 5306 (WAC 296-17-679), 6103 (WAC 296-17-680), 6109 (WAC 296-17-686), 6303 (WAC 296-17-698), 6501 (WAC 296-17-714), 6502 (WAC 296-17-715), 6506 (WAC 296-17-719), 7202 (WAC 296-17-764).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-757, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-757, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-757, filed 11/30/79, effective 1/1/80.]

WAC 296-17-758 Classification 7105.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature enumerated in this manual as being subject to any of the following risk classifications: 1007 (WAC 296-17-53504), 1106 (WAC 296-17-53803), 1303 (WAC 296-17-540), 2201 (WAC 296-17-565), 2202 (WAC 296-17-566), 3403 (WAC 296-17-581), 3405 (WAC 296-17-58201), 3406 (WAC 296-17-583), 3409 (WAC 296-17-58501), 3408 (WAC 296-17-585), 3602 (WAC 296-17-594), 3701 (WAC 296-17-599), 3707 (WAC 296-17-603), 3708 (WAC 296-17-604), 3801 (WAC 296-17-605), 3802 (WAC 296-17-606), 3808 (WAC 296-17-612), 3905 (WAC 296-17-618), 3909 (WAC 296-17-61804), 4101 (WAC 296-17-620), 4103 (WAC 296-17-622), 4107 (WAC 296-17-626), 4108 (WAC 296-17-627), 4109 (WAC 296-17-628), 4501 (WAC 296-17-637), 4502 (WAC 296-17-638), 4503 (WAC 296-17-639), 4504 (WAC 296-17-640), 4905 (WAC 296-17-654), 5207 (WAC 296-17-676), 6105 (WAC 296-17-682), 6107 (WAC 296-17-684), 6201 (WAC 296-17-687), 6203 (WAC 296-17-689), 6204 (WAC 296-17-690), 6205 (WAC 296-17-691), 6206 (WAC 296-17-692), 6209 (WAC 296-17-695), 6301 (WAC 296-17-696), 6302 (WAC 296-17-697), 6304 (WAC 296-17-699), 6305 (WAC 296-17-700), 6306 (WAC 296-17-701), 6308 (WAC 296-17-703), 6309 (WAC 296-17-704), 6402 (WAC 296-17-706), 6403 (WAC 296-17-707), 6404 (WAC 296-17-708), 6405 (WAC 296-17-709), 6406 (WAC 296-17-710), 6407 (WAC 296-17-711), 6503 (WAC 296-17-716), 6504 (WAC 296-17-717), 6505 (WAC 296-17-718), 6508 (WAC 296-17-721), 6509 (WAC 296-17-722), 6601 (WAC 296-17-723), 6603 (WAC 296-17-725), 6604 (WAC 296-17-726), 6605 (WAC 296-17-727), 6607 (WAC 296-17-729), 6704 (WAC 296-17-735), 6709 (WAC 296-17-740), 6909 (WAC 296-17-75301), 7308 (WAC 296-17-778).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-758, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-758, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-758, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-758, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-758, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-758, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-758, filed 11/30/79, effective 1/1/80.]

WAC 296-17-759 Classification 7106.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature

enumerated in this manual as being subject to any of the following risk classifications: 0301 (WAC 296-17-510), 0803 (WAC 296-17-529), 1103 (WAC 296-17-538), 1104 (WAC 296-17-53801), 1301 (WAC 296-17-539), 1404 (WAC 296-17-544), 1501 (WAC 296-17-545), 1507 (WAC 296-17-546), 2002 (WAC 296-17-555), 2003 (WAC 296-17-556), 2004 (WAC 296-17-557), 2005 (WAC 296-17-558), 2007 (WAC 296-17-560), 2008 (WAC 296-17-561), 2101 (WAC 296-17-562), 2102 (WAC 296-17-563), 2104 (WAC 296-17-564), 3309 (WAC 296-17-578), 3401 (WAC 296-17-579), 3407 (WAC 296-17-584), 3501 (WAC 296-17-586), 3503 (WAC 296-17-587), 3508 (WAC 296-17-592), 3702 (WAC 296-17-600), 3901 (WAC 296-17-614), 3906 (WAC 296-17-61801), 4401 (WAC 296-17-635), 4404 (WAC 296-17-636), 4802 (WAC 296-17-643), 4803 (WAC 296-17-644), 4804 (WAC 296-17-645), 4805 (WAC 296-17-646), 4806 (WAC 296-17-647), 4808 (WAC 296-17-649), 4809 (WAC 296-17-64901), 4810 (WAC 296-17-64902), 4811 (WAC 296-17-64903), 4812 (WAC 296-17-64904), 5307 (WAC 296-17-67901), 6104 (WAC 296-17-681), 6108 (WAC 296-17-685), 6202 (WAC 296-17-688), 6208 (WAC 296-17-694), 6408 (WAC 296-17-712), 6409 (WAC 296-17-713), 6602 (WAC 296-17-724), 6608 (WAC 296-17-730), 6706 (WAC 296-17-737), 6801 (WAC 296-17-741), 6802 (WAC 296-17-742), 6804 (WAC 296-17-744), 6908 (WAC 296-17-753), 7201 (WAC 296-17-763), 7301 (WAC 296-17-772), 7302 (WAC 296-17-773), 7307 (WAC 296-17-777).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-759, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-759, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-759, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-759, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-759, filed 11/30/79, effective 1/1/80.]

WAC 296-17-760 Classification 7107.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature enumerated in this manual as being subject to any of the following risk classifications: 0306 (WAC 296-17-512), 0307 (WAC 296-17-513), 0503 (WAC 296-17-518), 0601 (WAC 296-17-522), 0602 (WAC 296-17-523), 0603 (WAC 296-17-524), 0606 (WAC 296-17-526), 0607 (WAC 296-17-527), 0608 (WAC 296-17-52701), 1108 (WAC 296-17-53805), 1401 (WAC 296-17-542), 1801 (WAC 296-17-552), 2401 (WAC 296-17-567), 2903 (WAC 296-17-568), 2904 (WAC 296-17-569), 2906 (WAC 296-17-570), 2908 (WAC 296-17-57002), 3101 (WAC 296-17-571), 3102 (WAC 296-17-572), 3103 (WAC 296-17-573), 3104 (WAC 296-17-574), 3105 (WAC 296-17-575), 3301 (WAC 296-17-576), 3302 (WAC 296-17-57601), 3303 (WAC 296-17-57602), 3402 (WAC 296-17-580), 3404 (WAC 296-17-582), 3603 (WAC 296-17-595), 3604 (WAC 296-17-596), 3605 (WAC 296-17-597), 3606 (WAC 296-17-598), 3902 (WAC 296-17-615), 3903 (WAC 296-17-616), 4002 (WAC 296-17-619), 4201 (WAC 296-17-629), 4301 (WAC 296-17-630), 4302 (WAC 296-17-631), 4303 (WAC 296-17-632), 4304 (WAC 296-17-633), 4402 (WAC 296-17-63501), 4601 (WAC 296-17-641), 5101 (WAC 296-17-661), 5102 (WAC 296-17-662), 5103 (WAC 296-17-663), 5105 (WAC 296-17-665), 5106 (WAC 296-17-666), 5107 (WAC 296-17-667), 5108 (WAC 296-17-668), 5109 (WAC 296-17-669), 5201 (WAC 296-17-670), 5202 (WAC 296-17-671), 5203 (WAC 296-17-672), 5204 (WAC 296-17-673), 5208 (WAC 296-17-67601), 5209 (WAC 296-17-67602), 6705 (WAC 296-17-736).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-760, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-760, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-760, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-760, filed 11/29/82, effective 1/1/83; 80-17-016 (Order 80-23), § 296-17-760, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-760, filed 11/30/79, effective 1/1/80.]

WAC 296-17-761 Classification 7108.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature enumerated in this manual as being subject to any of the following risk classifications: 0101 (WAC 296-17-501), 0102 (WAC 296-17-502), 0103 (WAC 296-17-503), 0104 (WAC 296-17-504), 0105 (WAC 296-17-505), 0106 (WAC 296-17-506), 0107 (WAC 296-17-50601), 0108 (WAC 296-17-50602), 0109 (WAC 296-17-507), 0206 (WAC 296-17-675), 0302 (WAC 296-17-511), 0401 (WAC 296-17-514), 0402 (WAC 296-17-515), 0403 (WAC 296-17-516), 0502 (WAC 296-17-517), 0504 (WAC 296-17-519), 0505 (WAC 296-17-520), 0508 (WAC 296-17-521), 0509 (WAC 296-17-52101), 0510 (WAC 296-17-52102), 0511 (WAC 296-17-52103), 0512 (WAC 296-17-52104), 0604 (WAC 296-17-525), 0701 (WAC 296-17-528), 0804 (WAC 296-17-530), 0901 (WAC 296-17-532), 1002 (WAC 296-17-534), 1003 (WAC 296-17-535), 1004 (WAC 296-17-53501), 1101 (WAC 296-17-536), 1102 (WAC 296-17-537), 1109 (WAC 296-17-53806), 1703 (WAC 296-17-550), 1704 (WAC 296-17-551), 2105 (WAC 296-17-56401), 3506 (WAC 296-17-590), 4305 (WAC 296-17-634), 5206 (WAC 296-17-675), 6207 (WAC 296-17-693), 6609 (WAC 296-17-731), 6902 (WAC 296-17-747), 6904 (WAC 296-17-749), 6905 (WAC 296-17-750), 6907 (WAC 296-17-752), 7103 (WAC 296-17-756).

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-761, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-761, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-761, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-761, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-761, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-761, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035.

79-12-086 (Order 79-18), § 296-17-761, filed 11/30/79, effective 1/1/80.]

WAC 296-17-762 Classification 7109.

Temporary help companies

This classification applies to employees of temporary help companies, N.O.C., that are referred on a temporary basis to its customers. This classification applies if the customer's business is by nature enumerated in this manual as being subject to any of the following risk classifications: 0201 (WAC 296-17-508), 0202 (WAC 296-17-509), 0506 (WAC 296-17-52001), 0507 (WAC 296-17-52002), 1005 (WAC 296-17-53502), 1701 (WAC 296-17-548), 1702 (WAC 296-17-549), 5001 (WAC 296-17-659), 5002 (WAC 296-17-660), 5003 (WAC 296-17-66001), 5004 (WAC 296-17-66002), 6803 (WAC 296-17-743), 6903 (WAC 296-17-748).

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-762, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-762, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-762, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-762, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-762, filed 11/30/79, effective 1/1/80.]

WAC 296-17-763 Classification 7201.

State government - this classification is to be used to report all employments of workers assigned to work at state operated facilities that provide patient or health care of any type. Usage of this classification is not limited to state-operated hospitals as it is intended to also cover health care facilities at state schools, infirmaries at correctional institutions, travelling nurses and physicians, etc.

This classification excludes clerical office and white collar professional employments that are not engaged in providing or attending to patient care and all blue collar employments

See risk classifications 4902 (WAC 296-17-651), 5307 (WAC 296-17-67901) and 7103 (WAC 296-17-756) for other state government operations.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-763, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-763, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-763, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-763, filed 11/30/79, effective 1/1/80.]

WAC 296-17-764 Classification 7202.

Real estate agencies

This classification includes clerical office and sales personnel but, excludes building management and/or property development.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-764, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-764, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-764, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-764, filed 11/30/79, effective 1/1/80.]

WAC 296-17-765 Classification 7203.

Community service workers

This classification includes all community service workers performing work for counties, cities or towns pursuant to court order or under the provisions of chapter 13.40 RCW.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-765, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 84-12-048 (Order 84-12), § 296-17-765, filed 6/1/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-765, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-765, filed 11/30/81, effective 1/1/82.]

WAC 296-17-766 Classification 7204.

Preferred workers

This classification includes all preferred workers in accordance with the provisions of RCW 51.16.120(3) and WAC 296-16-010.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-766, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-766, filed 11/30/83, effective 1/1/84; 81-24-042 (Order 81-30), § 296-17-766, filed 11/30/81, effective 1/1/82.]

WAC 296-17-772 Classification 7301.

Dairy farms

This classification includes all farm operations related and incidental to the enterprise described and applies to all acreage devoted to the raising of these animals.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-772, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-772, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-772, filed 11/29/82, effective 1/1/83.]

WAC 296-17-773 Classification 7302.

Livestock farms

Sheep or goat raising

This classification includes all farm operations related and incidental to the enterprises described above and applies to all acreage devoted to the raising of these animals.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-773, filed 11/27/85, effective 1/1/86; 83-24-017 (Order 83-36), § 296-17-773, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-773, filed 11/29/82, effective 1/1/83.]

WAC 296-17-777 Classification 7307.

Christmas tree planting, pruning and harvesting.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-777, filed 11/27/85, effective 1/1/86; 82-24-047 (Order 82-38), § 296-17-777, filed 11/29/82, effective 1/1/83.]

WAC 296-17-778 Classification 7308.

Animal shelters

Dog grooming parlors

Dog pounds

Humane societies

This classification includes clerical office and sales personnel.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-778, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-

7), § 296-17-778, filed 2/28/85, effective 4/1/85; 83-24-017 (Order 83-36), § 296-17-778, filed 11/30/83, effective 1/1/84.]

WAC 296-17-779 Classification 7309.

Work activity centers

For the purpose of this rule "work activity center" will refer to such centers licensed through the department of social and health services and as defined in Title 29, Part 525.2(c) of the Code of Federal Regulations as published by United States Department of Labor, providing job training and learning skills to mentally and/or developmentally disabled workers and who are enrolled as clients of the center. Usage of this classification will be limited to mentally and/or developmentally disabled workers employed within a work activity center and excludes all other employments of mentally and/or developmentally disabled workers not employed in a work activity center which will be separately rated in risk classification 6709 (WAC 296-17-740). This classification further excludes professional, clerical, and other blue-collar employments which will be separately rated in risk classification 6709 (WAC 296-17-740) even though the only operation of the employer may be a work activity center.

[Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-779, filed 11/27/85, effective 1/1/86. Statutory Authority: RCW 51.04.020(1). 84-11-034 (Order 84-11), § 296-17-779, filed 5/15/84.]

WAC 296-17-850 Experience rating plan--Eligibility and experience period. (1) **Eligibility.** Each employer who has reported experience during more than one fiscal year of the "experience period" shall have his base rates multiplied by an "experience modification" calculated in accordance with the rules of this manual. The development of the "experience modification" as set forth in WAC 296-17-855 shall include losses and exposure reported in all risk classes: *Provided*, That the "experience modification" determined in accordance with WAC 296-17-855 shall not apply to industrial insurance rates in the following classes: 0505 (WAC 296-17-520), 0506 (WAC 296-17-52001), 0507 (WAC 296-17-52002), 0510 (WAC 296-17-52102), 0511 (WAC 296-17-52103), and 0512 (WAC 296-17-52104). Employer premiums in the foregoing classes shall be computed at base industrial insurance rates as set forth in WAC 296-17-895.

(2) **Experience period.** The "experience period" shall be the oldest three of the four fiscal years preceding the effective date of premium rates as set forth in WAC 296-17-895.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-850, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-850, filed 11/27/85, effective 1/1/86; 85-13-046 (Order 85-13), § 296-17-850, filed 6/17/85; 82-24-047 (Order 82-38), § 296-17-850, filed 11/29/82, effective 1/1/83. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-850, filed 11/30/79, effective 1/1/80; Order 76-18, § 296-17-850, filed 5/28/76, effective 7/1/76; Order 74-40, § 296-17-850, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-850, filed 11/9/73, effective 1/1/74.]

WAC 296-17-855 Experience modification. The basis of the experience modification shall be a comparison of the actual losses charged to an employer during the experience period with the losses which would be expected for an average employer reporting the same exposures in each classification. The comparison shall contain actuarial refinements designed to mitigate the effects of losses which may be considered catastrophic or of doubtful statistical significance, due consideration being given to the volume of the employer's experience. Except for those employers who qualify for an adjusted experience modification as specified in WAC 296-17-860 or 296-17-865, the experience modification shall be calculated from the formula:

$$\text{MODIFICATION} = \frac{Ap + WAe + (1-W)\,Ee + B}{E + B}$$

The components Ap, WAe, and (1-W) Ee are values which shall be charged against an employer's experience record. The component, E, shall be the expected value of these charges for an average employer reporting the same exposures in each classification. The meaning and function of each symbol in the formula is specified below.

"Ap" signifies "primary actual losses." For each claim the primary actual loss is defined as that portion of the claim which is considered completely rateable for all employers and which is to enter the experience modification calculation at its full value. For each claim in excess of $5,404 the primary actual loss shall be determined from the formula:

$$\text{Primary loss} = \frac{13{,}510}{\text{Total loss} + 8{,}106} \times \text{total loss}$$

Primary actual losses for selected claim values are shown in Table I. For each claim less than $5,404 the full value of the claim shall be considered a primary loss.

"Ae" signifies "excess actual losses." For each claim the excess actual loss is defined as that portion of the claim which is not considered completely rateable for all employers. The excess actual loss for each claim shall be determined by subtracting the primary loss from the total loss.

"W" signifies "W value." For each employer, the W value determines the portion of the actual excess losses which shall be included in the calculation of his experience modification, due consideration being given to the volume of his experience. This amount is represented by the symbol "WAe" in the experience modification formula. W values are set forth in Table II.

"E" signifies "expected losses." An employer's expected losses shall be determined by multiplying his reported exposure in each classification during the experience period by the classification expected loss rate. Expected loss rates are set forth in Table III.

"Ee" signifies "expected excess losses." Expected losses in each classification shall be multiplied by the classification "D-Ratio" to obtain "expected primary losses." Expected excess losses shall then be calculated by subtracting expected primary losses from expected

total losses. Each employer shall have a statistical charge included in the calculation of his experience modification, said charge to be actuarially equivalent to the amount forgiven an average employer because of the exclusion of a portion of his excess actual losses. This charge is represented by "(1–W) Ee" in the experience modification formula. D–Ratios are set forth in Table III.

"B" signifies "B value" or "ballast." In order to limit the effect of a single severe accident on the modification of a small employer, a stabilizing element (B value) shall be added to both actual and expected losses. B values are set forth in Table II.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86–24–042 (Order 86–41), § 296–17–855, filed 11/26/86. Statutory Authority: RCW 51.16.035. 85–24–032 (Order 85–33), § 296–17–855, filed 11/27/85, effective 1/1/86; 84–24–016 (Order 84–23), § 296–17–855, filed 11/28/84, effective 1/1/85; 83–24–017 (Order 83–36), § 296–17–855, filed 11/30/83, effective 1/1/84; 82–24–047 (Order 82–38), § 296–17–855, filed 11/29/82, effective 1/1/83; 81–24–042 (Order 81–30), § 296–17–855, filed 11/30/81, effective 1/1/82; 80–17–016 (Order 80–23), § 296–17–855, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–855, filed 11/30/79, effective 1/1/80; Order 77–27, § 296–17–855, filed 11/30/77, effective 1/1/78; Order 74–40, § 296–17–855, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–855, filed 11/9/73, effective 1/1/74.]

WAC 296–17–860 Transition adjustment. In the event that an employer has no compensable accidents during the experience period and the experience modification calculated in accordance with WAC 296–17–855 is greater than the experience modification shown in Table IV, WAC 296–17–890 then such modification shall be reduced to the value shown in Table IV. For the purpose of this rule, a compensable accident is defined as one which has resulted in, or is expected to result in, time loss compensation, permanent disability or death.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–860, filed 11/30/79, effective 1/1/80; Order 74–40, § 296–17–860, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–860, filed 11/9/73, effective 1/1/74.]

WAC 296–17–865 Experience modification limitations. (1) Notwithstanding the experience modification otherwise obtained in this manual, no employer's experience modification shall increase or decrease by more than 25% during any one year except as provided in subparagraph (2) below.

(2) The 25% limitation on the change in the experience modification shall not apply in the following cases:

(a) In cases where it would cause an employer with better than average experience during the experience period to receive an experience modification greater than 1.00.

(b) In cases where it would cause an employer with worse than average experience during the experience period to receive a modification less than 1.00.

In the above specified cases the employer's modification shall be allowed to decrease or to increase, as the case may be, to 1.00.

[Order 77–27, § 296–17–865, filed 11/30/77, effective 1/1/78; Order 74–40, § 296–17–865, filed 11/27/74, effective 1/1/75; Order 73–22, § 296–17–865, filed 11/9/73, effective 1/1/74.]

WAC 296–17–870 Evaluation of actual losses. Except as provided in the following subsections of this paragraph, actual losses shall include all payments as of the "valuation date" for each claim arising from an accident occurring during the experience period. Losses for claims open as of the valuation date may also include a reserve for future payments. Actual losses on claims for accidents occurring outside of the experience period shall not be included.

(1) **Valuation date.** The valuation date shall be on and include December 31, one year and one day immediately preceding the effective date of premium rates as set forth in WAC 296–17–895.

(2) **Retroactive adjustments – revision of losses between valuation dates.** No claim value shall be revised between valuation dates and no retroactive adjustment of an experience modification shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment.

(b) In cases where a third party recovery is made.

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120.

(d) In cases where a claim is officially closed and is determined to be noncompensable.

In the above specified cases retroactive adjustment of the experience modification shall be made for each rating in which the claim was included.

(3) **Average death value.** Each fatality occurring to a worker included within the mandatory or elective coverage of Title 51 RCW shall be assigned the "average death value," said value to be the average incurred cost for all such fatalities occurring during the experience period. The average death value is set forth in Table II.

(4) **Third party recovery.** In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim for each year in which the claim's injury date falls within the experience period (see WAC 296–17–850). This portion shall be calculated at the time the recovery is made, and shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. If the claim is open at the time the recovery is made, then costs before and after recovery may include an allowance for future claim payments. Both the primary and excess components of the actual loss amount shall be reduced in the same proportion.

(5) **Second injury claims.** The primary and excess values of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

(6) **Occupational disease claims.** When a claim results from an employee's exposure to an occupational disease hazard, the "date of injury," for the purposes of experience rating, shall be the date on which the disability was diagnosed, giving rise to the filing of a claim for benefits. The cost of any occupational disease claim, paid

from the accident fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment involving exposure to the hazard. Each insured employer who had employed the claimant during the experience period, and for at least ten percent of the claimant's exposure to the hazard, shall be charged for his share of the claim based upon the prorated costs.

(7) **Maximum claim value.** No claim shall enter an employer's experience record at a value greater than the "maximum claim value." The maximum claim value is set forth in Table II.

[Statutory Authority: RCW 51.16.035. 81-24-042 (Order 81-30), § 296-17-870, filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-870, filed 11/27/78, effective 1/1/79; Order 75-38, § 296-17-870, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-870, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-870, filed 11/9/73, effective 1/1/74.]

WAC 296-17-873 Structure of employer changes--Experience rating. WAC 296-17-873 through 296-17-87309 governs combination of entities and status changes of ownership for purposes of experience rating.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-873, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87301 Definitions. The definitions in this section shall apply throughout WAC 296-17-873 through 296-17-87309.

(1) "Entity" means an individual, partnership, corporation, unincorporated association, or fiduciary operation (e.g. trust, receivership, or estate of deceased individual).

(2) "Immediate family member" as used in this rule means father, mother, husband, wife, son, daughter, stepson, stepdaughter, grandson, or granddaughter.

(3) "Majority interest" means more than fifty percent interest. If an entity other than a partnership:

(a) Has issued voting stock, majority interest means a majority of the issued voting stock. If all stock issues do not have the same number of votes per share, majority interest means a majority of the voting rights;

(b) Has not issued voting stock, majority interest means a majority of the members;

(c) Has not issued voting stock and has no members, a majority interest means a majority of the board of directors or comparable governing body.

If an entity is a partnership, majority interest means more than one-half of the general partners.

(4) "Joint venture" means a combination of two or more entities, entered into for the purpose of carrying to completion a specific job of limited duration.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-87301, filed 11/30/79, effective 1/1/80.]

WAC 296-17-87305 Change in ownership. (1) For the purpose of WAC 296-17-873 through 296-17-87309 management is considered to be vested in ownership. Except as specifically provided otherwise herein, ownership whether active or inactive, governs the administration of WAC 296-17-873 through 296-17-87309, and the words "nominal" and "material" denote respectively the effect of a particular change in ownership. If a change has occurred which the provisions of subsections (2) through (5) of this section denominate "nominal," the experience of the past shall be utilized for future modification. If, on the other hand, the change is denominated "material," the past experience shall be disregarded and the risk written at manual or otherwise applicable rates.

In application of WAC 296-17-873 through 296-17-87309, ownership changes of any entity which is neither a partnership, a joint venture, nor a corporation that has issued voting stock shall be decided in accordance with the provisions of subsections (2) through (5) of this section applicable to corporations. The provisions of sections (2) through (5) of this section shall be applied as though the entity has issued voting stock and the stock was:

(a) Held in equal amounts by each of its members; or

(b) If the entity does not have members, held in equal amounts by each member of the board of directors or comparable governing body.

Two or more changes during a twelve-month period shall be considered as a single change.

The department shall in each case determine from the applicable provisions of subsections (2) through (5) of this section whether a change is "nominal" or "material," and if no provision of subsections (2) through (5) of this section is expressly applicable it shall be governed by a consideration of WAC 296-17-873 through 296-17-87309 as a whole and of its several parts interpreted in the light of such relevant evidence as is offered.

(2) Individual.

(a) Death of an individual is a material change. Exception: Where a member or members of the immediate family take over the business, either as the executor, executrix, administrator, or sole owner the change is nominal.

(b) Sale of business to another is a material change. Exception: Where the sale is made to a member or members of the immediate family the change is nominal.

(c) Bankruptcy or insolvency with:

(i) Continued operation with appointment of a trustee is a nominal change;

(ii) Withdrawal of the trustee and reversion to the original owner is a nominal change;

(iii) Withdrawal of a trustee but with new owners is a material change.

(d) Formation of a living estate is a nominal change.

(e) Formation of a partnership is a material change. Exceptions:

(i) A partnership composed of only two general partners is a nominal change;

(ii) A partnership composed of members of an immediate family is a nominal change;

(iii) A limited partnership in which the individual is one of not more than two general partners is a nominal change.

(f) Formation of a corporation is a material change. Exception: If the individual or members of his immediate family own one-half or more of the issued voting stock the change is nominal.

(3) Partnership.

(a) Sale, conveyance, transfer, or assignment of partnership interest by one or more partners and the partnership not dissolved is a material change. Exceptions:

(i) If prior to the change all partners were members of an immediate family and after the change one–half or more of the general partners are members of such immediate family the change is nominal;

(ii) If one–half or more of the general partners prior to the change constitute one–half or more of the general partners after the change the change is nominal.

(b) If the partnership is dissolved the change is material. Exceptions:

(i) In a partnership wherein all partners were members of an immediate family and one or more of the members of such family constitute one–half or more of the general partners in the new partnership, or own one–half or greater interest in the new entity or entities if they are not partnerships the change is nominal;

(ii) If one–half or more of the general partners of the dissolved partnership constitute one–half or more of the general partners in the new partnership or own a one–half or greater interest in the new entity or entities if they are not a partnership the change is nominal.

(c) Bankruptcy or insolvency.

(i) Continued operation with appointment of a trustee is a nominal change.

(ii) Withdrawal of a trustee and reversion to one–half or more of the original general partners is a nominal change.

(iii) Withdrawal of a trustee with the original general partners not constituting one–half or more of the owners is a material change.

(4) Corporations.

(a) Old corporation dissolved or nonoperative, not a merger or consolidation.

(i) Formation of a new corporation is a material change. Exceptions:

(A) If the stockholders common to both the dissolved or nonoperative corporation and the newly formed corporation own or owned one–half or more of the issued voting stock in the old corporation and own one–half or more of the issued voting stock in the newly formed corporation the change is nominal;

(B) If the nonoperative corporation owns one–half or more of the issued voting stock of the newly formed corporation the change is nominal;

(C) In a family corporation (meaning a corporation whose entire issued voting stock is held by the members of an immediate family) only those changes may be considered which involve the acquisition of ownership by a person not a member of such immediate family.

(ii) Reversion to an individual is a material change. Exceptions:

(A) If the individual owns or owned one–half or more of the issued voting stock of the dissolved or nonoperative corporation the change is nominal;

(B) If the individual was a member of an immediate family which wholly owned the corporation the change is nominal.

(iii) Reversion to a partnership is a material change. Exceptions:

(A) If the stockholders who own or owned one–half or more of the issued voting stock of the dissolved or nonoperative corporation constitute one–half or more of the general partners the change is nominal;

(B) If the corporation was wholly owned by members of an immediate family and a member or members of that immediate family constitute one–half or more of the general partners the change is nominal.

(b) Transfer of voting stock, not otherwise provided for in subsections (2) through (5) of this section.

(i) If one–half or less of issued voting stock is transferred the change is nominal.

(ii) If more than one–half of issued voting stock is transferred the change is material. Exception: If the stockholders who own or owned one–half or more of the issued voting stock prior to such sale own one–half or more of the issued voting stock after such sale the change is nominal.

(iii) In a family corporation (meaning a corporation whose entire issued voting stock is held by the members of an immediate family) only those changes shall be considered which involve the acquisition of ownership by a person not a member of such immediate family.

(c) Trustees, receiverships, and similar temporary changes of management are nominal changes.

(d) In the case of consolidations or mergers of corporations the experience of all consolidated or merged corporations shall be combined for computing the modification for the consolidated or surviving corporation.

(5) Joint ventures.

(a) Any change in the membership of the joint venture is a material change.

(b) A nominal change in the ownership of one of the joint venturers is a nominal change.

(c) A material change in the ownership of one of the joint venturers is a material change.

(d) The experience of a joint venture shall be continued for other operations which may be undertaken, as a joint venture, by the same group of joint venturers, either during the same time as the original venture or at a later date.

(e) Members of a joint venture may subcontract part or all of their operations to one or more of the joint venturers. Work thus subcontracted becomes a regular part of the subcontractor's operations and is subject to his experience modification.

(6) Notwithstanding any of the provisions contained in this section the past experience of any single employing entity either corporate, partnership, or otherwise shall not be utilized for future modification by more than one newly formed employing entity either corporate, partnership, or otherwise. The following guidelines will be used in cases where two previous co–owners of a firm would both otherwise be individually entitled to the past experience of the firm based on their previous fifty percent ownership.

(a) If the change in the ownership of the firm was nominal, the experience will remain with the firm and belong to the new owners. Neither previous co–owner

shall be entitled to the experience, except, coincidentally, by his or her continuing ownership interest in the ongoing firm.

(b) If the change in ownership was material or the firm was discontinued, and only one of the previous co–owners has an ongoing state fund account, the experience shall be assigned to the previous co–owner with the ongoing account.

(c) If the change in ownership was material, or the business was discontinued, and both previous co–owners have ongoing state fund accounts, the experience shall not be assigned to either of the previous co–owners.

Assignment of past experience to an entity in accordance with the above priorities will be final, unless it shall be determined that there was an error or misrepresentation which caused the experience to be assigned incorrectly. The assignment of experience shall not be altered by a subsequent change in status of any of the interested parties which would have changed the priority of their claim to the experience.

[Statutory Authority: RCW 51.16.035. 83–24–017 (Order 83–36), § 296–17–87305, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87305, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87306 Combination of entities. Separate entities shall be combined for experience rating purposes when the same person or persons and/or a single corporation owns a majority interest in each of the entities.

Note: If two or more different combinations are possible in accordance with the provisions of this section, the combination producing the greatest amount of expected losses during the experience period shall be made. The experience of any entity used in such combinations may not be otherwise used in combination with any other entity. The experience used in a rating of combination shall be subject to the provisions of WAC 296–17–87305 (Change in ownership).

Exceptions:

(1) Individual trusts may not be combined for experience rating purposes with operations of the trustee nor with the operations of any other trusts. However, two or more trusts having identical trustees and also having identical beneficiaries shall be combined.

(2) Joint venture operations may not be combined with the operations of any other entity, even though the members of the joint venture are identically owned.

This section applies only where the entities are or have been operating and insured concurrently in Washington. It does not apply where concurrent operations are for a short period of time, not exceeding one year, if the operation of the original entity during the period both entities were operating, was restricted to the completion of contracts entered into prior to the new entity commencing operations.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87306, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87307 Revision or withdrawal of experience modifications. Experience modifications are not subject to revision or withdrawal because of the application of WAC 296–17–87305 or 296–17–87306 unless one of the following applies:

(1) Written notice to the department has been made by the affected entity or entities advising of the change of ownership status or the common ownership of a combination of entities: *Provided*, That the effective date of any such revision or withdrawal that would affect the premium covering any periods prior to the calendar quarter during which such notice in writing was furnished the department, will be at the department's discretion to assure that no entity or entities will evade an unfavorable cost;

(2) The foregoing subsection (1) will apply in the absence of written notice to the department if the department determines the facts that would otherwise have been supplied by such written notice.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87307, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87308 Experience modification. WAC 296–17–873 through 296–17–87309 do not permit the establishment of more than one experience modification on a single risk at the same time.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87308, filed 11/30/79, effective 1/1/80.]

WAC 296–17–87309 Classification assignments—Applicability. All rules in this manual governing assigning of classifications shall apply with respect to entities that are combined for experience rating purposes in the same manner as though the combination of entities were a single employer.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–17–87309, filed 11/30/79, effective 1/1/80.]

WAC 296–17–875 Table I.

Primary Losses for Selected Claim Values

Claim Value	Primary Loss
5,404	5,404
6,476	6,000
8,716	7,000
11,769	8,000
16,176	9,000
23,094	10,000
35,524	11,000
64,419	12,000
91,509*	12,411
135,100**	12,745

* Average death value

** Maximum claim value

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86–24–042 (Order 86–41), § 296–17–875, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86–12–041 (Order 86–18), § 296–17–875, filed 5/30/86, effective 7/1/86; 85–24–032 (Order 85–33), § 296–17–875, filed 11/27/85, effective 1/1/86; 84–24–016 (Order 84–23), § 296–17–875, filed 11/28/84, effective 1/1/85; 83–24–017 (Order 83–36), § 296–17–875, filed 11/30/83, effective 1/1/84; 82–24–047 (Order 82–38), § 296–17–875, filed 11/29/82, effective 1/1/83; 81–24–042 (Order 81–30), § 296–17–875, filed 11/30/81, effective 1/1/82; 80–

17-016 (Order 80-23), § 296-17-875, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-875, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-875, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-875, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-875, filed 11/30/76; Order 75-38, § 296-17-875, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-875, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-875, filed 11/9/73, effective 1/1/74.]

WAC 296-17-880 Table II.

"B" and "W" Values

Maximum Claim Value = $ 135,100
Average Death Value = $ 91,509

Expected Losses			B	W
2,926	&	Under	25,490	.00
2,927	–	5,897	25,235	.01
5,898	–	8,912	24,980	.02
8,913	–	11,973	24,725	.03
11,974	–	15,081	24,470	.04
15,082	–	18,237	24,215	.05
18,238	–	21,441	23,961	.06
21,442	–	24,696	23,706	.07
24,697	–	28,003	23,451	.08
28,004	–	31,363	23,196	.09
31,364	–	34,778	22,941	.10
34,779	–	38,248	22,686	.11
38,249	–	41,776	22,431	.12
41,777	–	45,363	22,176	.13
45,364	–	49,010	21,921	.14
49,011	–	52,720	21,666	.15
52,721	–	56,494	21,412	.16
56,495	–	60,333	21,157	.17
60,334	–	64,240	20,902	.18
64,241	–	68,217	20,647	.19
68,218	–	72,265	20,392	.20
72,266	–	76,386	20,137	.21
76,387	–	80,584	19,882	.22
80,585	–	84,860	19,627	.23
84,861	–	89,216	19,372	.24
89,217	–	93,655	19,117	.25
93,656	–	98,179	18,863	.26
98,180	–	102,792	18,608	.27
102,793	–	107,495	18,353	.28
107,496	–	112,292	18,098	.29
112,293	–	117,185	17,843	.30
117,186	–	122,178	17,588	.31
122,179	–	127,274	17,333	.32
127,275	–	132,477	17,078	.33
132,478	–	137,790	16,823	.34
137,791	–	143,216	16,568	.35
143,217	–	148,759	16,314	.36
148,760	–	154,425	16,059	.37
154,426	–	160,216	15,804	.38
160,217	–	166,137	15,549	.39
166,138	–	172,194	15,294	.40
172,195	–	178,390	15,039	.41
178,391	–	184,731	14,784	.42
184,732	–	191,222	14,529	.43
191,223	–	197,869	14,274	.44
197,870	–	204,678	14,019	.45
204,679	–	211,655	13,765	.46
211,656	–	218,807	13,510	.47
218,808	–	226,140	13,255	.48
226,141	–	233,662	13,000	.49
233,663	–	241,381	12,745	.50
241,382	–	249,304	12,490	.51
249,305	–	257,439	12,235	.52
257,440	–	265,797	11,980	.53
265,798	–	274,387	11,725	.54
274,388	–	283,217	11,470	.55
283,218	–	292,301	11,216	.56
292,302	–	301,647	10,961	.57
301,648	–	311,270	10,706	.58
311,271	–	321,180	10,451	.59
321,181	–	331,392	10,196	.60
331,393	–	341,920	9,941	.61
341,921	–	352,780	9,686	.62
352,781	–	363,987	9,431	.63
363,988	–	375,560	9,176	.64
375,561	–	387,516	8,921	.65
387,517	–	399,875	8,667	.66
399,876	–	412,660	8,412	.67
412,661	–	425,892	8,157	.68
425,893	–	439,595	7,902	.69
439,596	–	453,797	7,647	.70
453,798	–	468,525	7,392	.71
468,526	–	483,810	7,137	.72
483,811	–	499,684	6,882	.73
499,685	–	516,183	6,627	.74
516,184	–	533,345	6,372	.75
533,346	–	551,211	6,118	.76
551,212	–	569,827	5,863	.77
569,828	–	589,241	5,608	.78
589,242	–	609,507	5,353	.79
609,508	–	630,682	5,098	.80
630,683	–	652,830	4,843	.81
652,831	–	676,021	4,588	.82
676,022	–	700,330	4,333	.83
700,331	–	725,843	4,078	.84
725,844	–	752,650	3,823	.85
752,651	–	780,855	3,569	.86
780,856	–	810,571	3,314	.87
810,572	–	841,924	3,059	.88
841,925	–	875,054	2,804	.89
875,055	–	910,117	2,549	.90
910,118	–	947,290	2,294	.91
947,291	–	986,771	2,039	.92
986,772	–	1,028,782	1,784	.93
1,028,783	–	1,073,577	1,529	.94
1,073,578	–	1,121,443	1,274	.95
1,121,444	–	1,172,711	1,020	.96
1,172,712	–	1,227,757	765	.97
1,227,758	–	1,287,018	510	.98
1,287,019	–	1,350,999	255	.99
1,351,000	&	over	0	1.00

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-880, filed 11/26/86. Statutory Authority:

RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-880, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-880, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-880, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-880, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-880, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-880, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-880, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-880, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-880, filed 11/30/77, effective 1/1/78; Order 76-36, § 296-17-880, filed 11/30/76; Order 75-38, § 296-17-880, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-880, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-880, filed 11/9/73, effective 1/1/74.]

WAC 296-17-885 Table III.

Expected Loss Rates and D-Ratios
Expected Loss Rates in Dollars Per Worker Hour for Indicated Fiscal Year

Class	1983	1984	1985	D-Ratio
0101	.7477	.7535	.6398	.343
0102	.6448	.6492	.5476	.366
0103	.7181	.7235	.6139	.346
0104	.4994	.5032	.4270	.344
0105	.6159	.6194	.5196	.386
0106	.9314	.9375	.7906	.368
0107	.5419	.5447	.4550	.401
0108	.7113	.7160	.6042	.365
0109	1.0573	1.0648	.9010	.355
0201	1.2210	1.2293	1.0387	.360
0202	1.4967	1.5097	1.2901	.320
0206	.7702	.7780	.6703	.290
0301	.3122	.3131	.2590	.438
0302	.9582	.9641	.8106	.378
0306	.4118	.4142	.3475	.386
0307	.3177	.3193	.2664	.407
0401	1.4880	1.4980	1.2644	.364
0402	.7676	.7723	.6494	.378
0403	.8007	.8061	.6805	.363
0502	.6451	.6486	.5436	.390
0503	.4525	.4552	.3828	.378
0504	.6822	.6865	.5781	.373
0505	.9247	.9308	.7855	.365
0506	1.1367	1.1418	.9503	.414
0507	1.2758	1.2844	1.0841	.364
0508	.9122	.9174	.7693	.387
0509	1.0086	1.0156	.8588	.358
0510	.6958	.6996	.5855	.395
0511	.5273	.5299	.4423	.404
0512	.8055	.8081	.6675	.441
0601	.2479	.2490	.2073	.413
0602	.2484	.2500	.2098	.383
0603	.3289	.3310	.2794	.365
0604	.7605	.7662	.6495	.349
0606	.1274	.1280	.1067	.410
0607	.1424	.1432	.1197	.395
0608	.1825	.1833	.1526	.412
0701	.8112	.8176	.6954	.337
0803	.1877	.1886	.1577	.398
0804	.2940	.2956	.2475	.393
0901	1.1999	1.2074	1.0164	.374
0902	.2919	.2997	.2783	.355
1002	.5886	.5917	.4943	.401
1003	.3488	.3502	.2906	.425
1004	.3488	.3502	.2906	.425
1005	1.8810	1.8910	1.5824	.395
1007	.0626	.0626	.0509	.502
1101	.2412	.2423	.2013	.419
1102	.7172	.7216	.6065	.379
1103	.2088	.2096	.1737	.430
1104	.2746	.2755	.2276	.440
1106	.0647	.0647	.0526	.497
1108	.2291	.2299	.1901	.438
1109	.5553	.5590	.4720	.363
1301	.1663	.1667	.1374	.450
1303	.1004	.1008	.0837	.422
1304	.0074	.0075	.0062	.443
1305	.1602	.1609	.1333	.429
1401	.5063	.5088	.4250	.402
1404	.2845	.2857	.2374	.420
1501	.1710	.1719	.1438	.397
1507	.1452	.1460	.1216	.410
1701	1.1044	1.1149	.9568	.304
1702	1.1044	1.1149	.9568	.304
1703	.3092	.3110	.2611	.383
1704	.3981	.3998	.3317	.425
1801	.4477	.4503	.3776	.387
2002	.3194	.3207	.2662	.423
2003	.2622	.2632	.2186	.423
2004	.4320	.4349	.3675	.360
2005	.1821	.1828	.1509	.443
2007	.2039	.2052	.1725	.381
2008	.1540	.1548	.1293	.402
2101	.2550	.2558	.2115	.436
2102	.2622	.2632	.2186	.423
2104	.1363	.1364	.1110	.494
2105	.2932	.2947	.2462	.401
2201	.1286	.1289	.1060	.457
2202	.1917	.1925	.1602	.415
2401	.2856	.2869	.2391	.410
2903	.3183	.3190	.2618	.464
2904	.4001	.4016	.3329	.429
2906	.2847	.2854	.2344	.460
2908	.5265	.5288	.4400	.415
3101	.3307	.3330	.2812	.362
3102	.2714	.2729	.2284	.394
3103	.2714	.2729	.2284	.394
3104	.2775	.2791	.2339	.390
3105	.3795	.3800	.3106	.478
3301	.4694	.4707	.3880	.449
3302	.3530	.3539	.2918	.448
3303	.1552	.1559	.1295	.421
3309	.2153	.2163	.1800	.415
3401	.2034	.2046	.1715	.389
3402	.1787	.1794	.1488	.426
3403	.0714	.0717	.0598	.408
3404	.1855	.1860	.1531	.453
3405	.1307	.1312	.1089	.423
3406	.0974	.0976	.0803	.456

Class	1983	1984	1985	D-Ratio	Class	1983	1984	1985	D-Ratio
3407	.1855	.1866	.1564	.389	4807	.8699	.8752	.7358	.378
3408	.0621	.0625	.0525	.377	4808	.2415	.2430	.2046	.374
3409	.0942	.0944	.0777	.454	4809	.1084	.1086	.0890	.470
3501	.3342	.3357	.2797	.412	4810	.0645	.0647	.0533	.452
3503	.1790	.1792	.1460	.490	4811	.1651	.1657	.1372	.433
3505	.2321	.2385	.2204	.399	4812	.1637	.1642	.1359	.434
3506	.3713	.3739	.3157	.362	4901	.0315	.0317	.0265	.400
3508	.2262	.2268	.1870	.447	4902	.0538	.0542	.0453	.402
3601	.0418	.0429	.0395	.439	4903	.0315	.0317	.0265	.400
3602	.0476	.0478	.0390	.484	4904	.0074	.0075	.0062	.443
3603	.3214	.3221	.2645	.461	4905	.1453	.1457	.1194	.469
3604	.5123	.5150	.4311	.394	4906	.0233	.0233	.0192	.457
3605	.1828	.1835	.1528	.413	4907	.0533	.0535	.0446	.414
3606	.3598	.3607	.2963	.459	4908	.0533	.0535	.0446	.414
3701	.1318	.1324	.1106	.401	4909	.0533	.0535	.0446	.414
3702	.2617	.2633	.2215	.376	5001	2.0234	2.0382	1.7268	.351
3706	.0932	.0958	.0886	.388	5002	.2399	.2405	.1978	.456
3707	.2254	.2259	.1850	.472	5003	.8351	.8422	.7183	.327
3708	.1155	.1157	.0949	.466	5004	.5643	.5659	.4662	.451
3801	.1357	.1364	.1143	.392	5101	.4145	.4166	.3475	.406
3802	.0768	.0770	.0627	.488	5102	.7635	.7668	.6383	.414
3803	.0767	.0789	.0726	.450	5103	.5722	.5754	.4817	.393
3805	.0767	.0789	.0726	.450	5104	.2659	.2732	.2529	.388
3806	.0767	.0789	.0726	.450	5106	.3446	.3464	.2893	.402
3808	.1220	.1223	.1005	.458	5107	.1850	.1899	.1756	.405
3809	.0966	.0993	.0915	.441	5108	.4028	.4046	.3369	.412
3901	.1168	.1172	.0974	.424	5109	.2986	.3000	.2501	.408
3902	.3203	.3221	.2706	.381	5201	.1881	.1889	.1565	.428
3903	.5073	.5096	.4245	.411	5204	.8834	.8854	.7262	.465
3904	.2895	.2974	.2750	.403	5205	.3443	.3536	.3279	.368
3905	.0690	.0690	.0561	.499	5206	.2462	.2479	.2095	.359
3906	.2443	.2453	.2036	.424	5207	.0682	.0684	.0563	.453
3909	.1080	.1080	.0870	.527	5208	.5304	.5337	.4490	.376
4002	.3353	.3375	.2843	.371	5209	.3789	.3805	.3162	.420
4101	.0759	.0761	.0625	.459	5301	.0109	.0109	.0091	.404
4103	.1663	.1668	.1380	.436	5305	.0142	.0143	.0118	.436
4104	.0603	.0620	.0571	.439	5306	.0162	.0162	.0136	.405
4107	.0392	.0393	.0322	.462	5307	.1531	.1539	.1285	.403
4108	.0759	.0761	.0625	.459	6103	.0201	.0202	.0167	.433
4109	.0759	.0761	.0625	.459	6104	.1384	.1390	.1161	.404
4201	.2603	.2617	.2190	.394	6105	.1195	.1199	.0988	.450
4301	.4103	.4106	.3341	.494	6106	.0987	.1014	.0936	.416
4302	.3990	.4001	.3291	.455	6107	.0739	.0743	.0625	.383
4303	.4761	.4777	.3950	.438	6108	.2597	.2595	.2087	.533
4304	.3338	.3350	.2771	.434	6109	.0177	.0177	.0145	.459
4305	.6185	.6211	.5158	.422	6201	.0821	.0824	.0685	.419
4401	.2215	.2223	.1840	.435	6202	.3415	.3433	.2872	.396
4402	.3201	.3221	.2712	.373	6203	.0618	.0621	.0517	.417
4404	.2622	.2632	.2186	.423	6204	.0723	.0724	.0590	.485
4501	.0762	.0767	.0651	.343	6205	.0723	.0724	.0590	.485
4502	.0221	.0224	.0187	.388	6206	.0723	.0724	.0590	.485
4503	.0288	.0295	.0272	.426	6207	.4338	.4350	.3581	.453
4504	.0326	.0327	.0269	.443	6208	.1382	.1389	.1166	.387
4601	.2706	.2729	.2329	.325	6209	.1107	.1111	.0919	.437
4802	.1637	.1642	.1359	.434	6301	.0536	.0539	.0454	.382
4803	.2038	.2045	.1687	.446	6302	.0920	.0925	.0772	.406
4804	.2892	.2897	.2376	.467	6303	.0256	.0258	.0218	.361
4805	.1946	.1950	.1599	.468	6304	.0647	.0651	.0547	.377
4806	.0404	.0405	.0330	.478	6305	.0284	.0285	.0237	.428

Class	1983	1984	1985	D-Ratio
6306	.1215	.1219	.1005	.445
6307	.0353	.0361	.0334	.455
6308	.0225	.0226	.0190	.372
6309	.0504	.0505	.0410	.496
6401	.0353	.0361	.0334	.455
6402	.1070	.1072	.0880	.465
6403	.0753	.0754	.0614	.488
6404	.0351	.0352	.0293	.417
6405	.2610	.2619	.2166	.436
6406	.0335	.0335	.0274	.485
6407	.0783	.0784	.0636	.499
6408	.1545	.1552	.1294	.408
6409	.2619	.2636	.2222	.369
6501	.0252	.0252	.0205	.484
6502	.0093	.0093	.0077	.430
6503	.0649	.0656	.0567	.284
6504	.1054	.1055	.0857	.499
6505	.0940	.0942	.0775	.459
6506	.0260	.0262	.0219	.395
6507	.1391	.1431	.1319	.429
6508	.2009	.2015	.1656	.457
6509	.1017	.1018	.0827	.499
6601	.1121	.1126	.0932	.432
6602	.2400	.2405	.1978	.457
6603	.1263	.1266	.1039	.464
6604	.0396	.0397	.0331	.417
6605	.1032	.1035	.0855	.440
6607	.0682	.0684	.0563	.453
6608	.1612	.1619	.1349	.410
6609	1.0877	1.0878	.8806	.511
6704	.0917	.0922	.0767	.410
6705	.2898	.2903	.2377	.472
6706	.1523	.1529	.1273	.416
6707	4.9000*	4.8900*	3.9300*	.540
6708	1.1255	1.1303	.9397	.418
6709	.0634	.0635	.0519	.478
6801	.3990	.4004	.3316	.432
6802	.2143	.2150	.1785	.424
6803	1.7418	1.7632	1.5389	.243
6804	.1221	.1229	.1035	.370
6809	.9439	.9440	.7642	.511
6902	.4937	.4978	.4240	.332
6903	2.4583	2.4794	2.1162	.324
6904	.1262	.1269	.1064	.390
6905	.1664	.1676	.1415	.361
6907	.7129	.7158	.5943	.423
6908	.1737	.1745	.1452	.415
6909	.0338	.0339	.0282	.414
7101	.0204	.0205	.0170	.415
7102	7.2600*	7.2700*	5.9500*	.473
7103	.1134	.1136	.0935	.457
7104	.0267	.0268	.0224	.409
7105	.1895	.1899	.1554	.474
7106	.3549	.3556	.2914	.469
7107	.4402	.4419	.3659	.433
7108	1.1867	1.1907	.9848	.437
7109	3.0232	3.0365	2.5265	.415
7201	.1492	.1494	.1216	.492
7202	.0255	.0256	.0216	.382
7203	.0548	.0550	.0458	.413
7301	.2944	.2952	.2437	.443
7302	.2589	.2593	.2121	.475
7307	.2581	.2583	.2100	.497
7308	.1083	.1090	.0913	.391
7309	.0634	.0635	.0519	.478

*Daily expected loss rate

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-885, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-885, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-885, filed 11/27/85, effective 1/1/86; 85-06-026 (Order 85-7), § 296-17-885, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-885, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-885, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-885, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-885, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-885, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-885, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-885, filed 11/27/78, effective 1/1/79, effective 1/1/80. Order 77-27, § 296-17-885, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-885, filed 12/1/77; Order 77-10, § 296-17-885, filed 5/31/77; Order 76-36, § 296-17-885, filed 11/30/76; Order 76-18, § 296-17-885, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-885, filed 11/24/75, effective 1/1/76; Order 74-40, § 296-17-885, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-885, filed 11/9/73, effective 1/1/74.]

WAC 296-17-890 Table IV.

Maximum experience modifications for firms with no compensable accidents:

Expected Loss Range	Maximum Experience Modification
1–1,279	.90
1,280–1,368	.89
1,369–1,465	.88
1,466–1,569	.87
1,570–1,683	.86
1,684–1,806	.85
1,807–1,940	.84
1,941–2,086	.83
2,087–2,245	.82
2,246–2,418	.81
2,419–2,606	.80
2,607–2,812	.79
2,813–3,037	.78
3,038–3,284	.77
3,285–3,554	.76
3,555–3,851	.75
3,852–4,177	.74
4,178–4,535	.73
4,536–4,930	.72
4,931–5,365	.71
5,366–5,846	.70

Expected Loss Range	Maximum Experience Modification
5,847–6,378	.69
6,379–6,968	.68
6,969–7,622	.67
7,623–8,348	.66
8,349 and over	.65

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-890, filed 11/26/86. Statutory Authority: RCW 51.16.035. 85-24-032 (Order 85-33), § 296-17-890, filed 11/27/85, effective 1/1/86; 84-24-016 (Order 84-23), § 296-17-890, filed 11/28/84, effective 1/1/85; 83-24-017 (Order 83-36), § 296-17-890, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-890, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-890, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-890, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-890, filed 11/30/79, effective 1/1/80.]

WAC 296-17-895 Industrial insurance accident fund base rates and medical aid rates by class of industry. Industrial insurance accident fund base rates and medical aid rates by class of industry shall be as set forth below.

Class	Rates Effective January 1, 1987 Accident Fund Base Rate	Medical Aid Fund Rate
0101	.9691	.4979
0102	.8407	.5011
0103	.9319	.7273
0104	.6476	.3741
0105	.8134	.9066
0106	1.2202	.8414
0107	.7202	.3936
0108	.9264	.5175
0109	1.3777	1.0044
0201	1.5945	.9469
0202	1.9198	1.4064
0206	.9745	.5973
0301	.4214	.3991
0302	1.2611	.6093
0306	.5415	.3811
0307	.4234	.4081
0401	1.9385	1.3450
0402	1.0102	1.0797
0403	1.0471	.7061
0502	.8535	.5109
0503	.5934	.6343
0504	.8957	.6092
0505	1.0905	.7581
0506	1.3696	1.1250
0507	1.5043	1.1570
0508	1.2053	1.0785
0509	1.3157	.7600
0510	.8314	.6067
0511	.6323	.4600
0512	.9813	.7045
0601	.3312	.2807
0602	.3277	.2357
0603	.4304	.2939
0604	.9882	.7320
0606	.1700	.1900
0607	.1888	.1598
0608	.2437	.2807
0701	1.0487	.5501
0803	.2491	.1936
0804	.3895	.2494
0901	1.5764	.6103
1002	.7824	.5896
1003	.4685	.2494
1004	.4685	.2494
1005	2.4828	1.4608
1007	.0864	.0950
1101	.3231	.3088
1102	.9441	.5122
1103	.2810	.2736
1104	.3710	.3273
1106	.0895	.1145
1108	.3093	.2879
1109	.7260	.5122
1301	.2257	.1776
1303	.1346	.1308
1304	.0100	.0120
1305	.2155	.2208
1401	.6712	.9028
1404	.3811	.2610
1501	.2268	.1851
1507	.1938	.1708
1701	1.4069	.5784
1702	1.4069	.5784
1703	.4078	.2446
1704	.5347	.3690
1801	.5916	.5730
2002	.4285	.3151
2003	.3518	.2715
2004	.5640	.4078
2005	.2464	.2458
2007	.2688	.2618
2008	.2048	.1608
2101	.3439	.3576
2102	.3518	.2715
2104	.1877	.2124
2105	.3895	.2303
2201	.1750	.1467
2202	.2563	.2300
2401	.3811	.3298
2903	.4345	.4141

Class	Rates Effective January 1, 1987 Accident Fund Base Rate	Medical Aid Fund Rate
2904	.5381	.3976
2906	.3879	.3112
2908	.7041	.4806
3101	.4321	.2890
3102	.3597	.2167
3103	.3597	.2167
3104	.3671	.3771
3105	.5208	.4449
3301	.6366	.4327
3302	.4786	.3668
3303	.2081	.2391
3309	.2880	.3596
3401	.2691	.2435
3402	.2400	.2757
3403	.0952	.0673
3404	.2520	.3049
3405	.1753	.1711
3406	.1324	.1646
3407	.2452	.1997
3408	.0818	.0772
3409	.1281	.1956
3501	.4463	.4294
3503	.2467	.2149
3506	.4853	.3334
3508	.3066	.2832
3602	.0656	.0679
3603	.4381	.4570
3604	.6789	.4972
3605	.2442	.2327
3606	.4900	.4004
3701	.1751	.1873
3702	.3441	.2123
3707	.3087	.2437
3708	.1577	.1598
3801	.1797	.1642
3802	.1059	.0994
3808	.1661	.1369
3901	.1566	.1302
3902	.4220	.3130
3903	.6772	.7086
3905	.0955	.1271
3906	.3279	.2556
3909	.1513	.1497
4002	.4399	.2942
4101	.1033	.1169
4103	.2243	.2379
4107	.0535	.0659
4108	.1033	.1169
4109	.1033	.1169
4201	.3449	.2297
4301	.5668	.6301
4302	.5425	.4816
4304	.4500	.3832
4305	.8293	.5437
4401	.2987	.2476
4402	.4205	.3115
4404	.3518	.2715
4501	.0988	.0828
4502	.0293	.0253
4504	.0440	.0601
4601	.3479	.4818
4802	.2205	.1518
4803	.2762	.2317
4804	.3951	.3269
4805	.2661	.2496
4806	.0555	.0490
4808	.3175	.3032
4809	.1482	.1552
4810	.0876	.0703
4811	.2225	.1867
4812	.2205	.1516
4901	.0419	.0321
4902	.0715	.0627
4903	.0419	.0321
4904	.0100	.0120
4905	.1988	.2141
4906	.0317	.0334
4907	.0712	.0609
4908	.0712	.1451
4909	.0712	.1451
5001	2.6317	1.6217
5002	.3263	.2985
5003	1.0697	.6447
5004	.7630	.6331
5101	.5521	.3684
5102	1.0204	.7242
5103	.7581	.5666
5106	.4581	.4653
5108	.5380	.5304
5109	.3982	.3199
5201	.2531	.1930
5204	1.2064	.5010
5206	.3213	.2009
5207	.0927	.1009
5208	.6973	.5208
5209	.5076	.3558
5301	.0144	.0152
5305	.0192	.0197
5306	.0216	.0174
5307	.2029	.1477
6103	.0271	.0362
6104	.1841	.2110
6105	.1623	.1291
6107	.0976	.1032
6108	.3645	.2903
6109	.0240	.0204

Class	Rates Effective January 1, 1987 Accident Fund Base Rate	Medical Aid Fund Rate
6201	.1100	.1062
6202	.4530	.3420
6203	.0827	.0700
6204	.0996	.1247
6205	.0996	.1247
6206	.0996	.1247
6207	.5893	.7970
6208	.1826	.1819
6209	.1494	.2005
6301	.0708	.0580
6302	.1226	.0935
6303	.0334	.0338
6304	.0851	.0742
6305	.0382	.0379
6306	.1646	.1814
6308	.0295	.0210
6309	.0697	.0778
6402	.1461	.1398
6403	.1038	.1109
6404	.0468	.0527
6405	.3522	.3232
6406	.0462	.0628
6407	.1084	.1301
6408	.2060	.2273
6409	.3434	.2543
6501	.0345	.0326
6502	.0126	.0161
6503	.0820	.0443
6504	.1455	.2311
6505	.1280	.1310
6506	.0345	.0345
6508	.2734	.2092
6509	.1408	.1658
6601	.1510	.1207
6602	.3266	.2501
6603	.1725	.1583
6604	.0530	.0424
6605	.1395	.1160
6607	.0927	.1009
6608	.2151	.1409
6609	1.5083	1.6682
6704	.1223	.1311
6705	.3970	.5934
6706	.2037	.2208
6707	6.89*	10.21*
6708	1.5068	1.7447
6709	.0870	.1294
6801	.5374	.2724
6802	.2875	.2758
6803	2.1570	.7558
6804	.1601	.1476
6809	1.3131	2.4261
6901	–	.0653
6902	.6368	.4317
6903	3.1596	3.4578
6904	.1670	.1222
6905	.2175	.1705
6906	–	.1705
6907	.9566	.7020
6908	.2322	.1756
6909	.0450	.0475
7101	.0273	.0219
7102	9.94*	24.63*
7103	.1544	.1104
7104	.0356	.0253
7105	.2598	.1653
7106	.4854	.3410
7107	.5911	.6145
7108	1.6014	.9580
7109	4.0427	2.6406
7201	.2053	.1683
7202	.0337	.0301
7203	.0732	.0643
7204	–	–
7301	.3983	.3552
7302	.3539	.4291
7307	.3558	.4272
7308	.1434	.1337
7309	.0870	.1294

*Daily rate. The daily rate shall be paid in full on any person for any calendar day in which any duties are performed that are incidental to the profession of the worker.

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-24-042 (Order 86-41), § 296-17-895, filed 11/26/86. Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-895, filed 5/30/86, effective 7/1/86; 85-24-032 (Order 85-33), § 296-17-895, filed 11/27/85, effective 1/1/86; 85-13-046 (Order 85-13), § 296-17-895, filed 6/17/85; 85-06-026 (Order 85-7), § 296-17-895, filed 2/28/85, effective 4/1/85; 84-24-016 (Order 84-23), § 296-17-895, filed 11/28/84, effective 1/1/85. Statutory Authority: RCW 51.04.020(1). 84-12-048 (Order 84-12), § 296-17-895, filed 6/1/84. Statutory Authority: RCW 51.16.035. 83-24-017 (Order 83-36), § 296-17-895, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-895, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-895, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-895, filed 1/30/81; 80-17-016 (Order 80-23), § 296-17-895, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-895, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-895, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-895, filed 11/30/77, effective 1/1/78; Emergency Order 77-25, § 296-17-895, filed 12/1/77; Order 77-10, § 296-17-895, filed 5/31/77; Order 76-36, § 296-17-895, filed 11/30/76; Order 76-18, § 296-17-895, filed 5/28/76, effective 7/1/76; Order 75-38, § 296-17-895, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-895, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-895, filed 11/27/74, effective 1/1/75; Order 73-22, § 296-17-895, filed 11/9/73, effective 1/1/74.]

WAC 296-17-900 Premium discounts. In providing a rate modification system consistent with recognized insurance principles, the department may, in addition to the experience rating plan, provide a premium discount plan which recognizes the differences in administrative expense to the department in collecting premiums from employers based on differences in their premium volume.

[Order 73-22, § 296-17-900, filed 11/9/73, effective 1/1/74.]

WAC 296-17-904 Definitions. The definitions in this section shall apply throughout WAC 296-17-905 through 296-17-91902.

(1) "Coverage period" means a one-year period beginning the first day of either January, April, July, or October.

(2) "Group" means those members of an association who have elected to have a group dividend and/or retrospective premium calculated based on the combined premium and incurred loss data of the participants, and have satisfactorily complied with eligibility requirements for doing so.

(3) "Premium" means only that portion of the money collected from an employer for worker's compensation (not to include any money paid in penalties or security deposits), which is deposited in the accident fund.

(4) "Standard premium" for a particular coverage period means premium collected or due for insurance coverage provided during the period, prior to any adjustments under a dividend or retrospective rating plan.

(5) "Incurred losses" for a coverage period means the estimated ultimate cost to the accident fund of claims arising from incidents occurring during the coverage period, subject to the special evaluation methods prescribed in WAC 296-17-915.

(6) "Loss development factor" means an actuarially determined factor which is multiplied times individual case basis estimates of claim costs to produce incurred losses for a firm or group of firms during a coverage period. Loss development factors allow for reopenings, aggravations, and any other individually unpredictable contingencies which may affect claim costs based on past experience of the accident fund as a whole.

(7) "Loss ratio" means incurred losses divided by standard premium.

(8) "Dividend" is a partial refund of standard premium based on a firm's standard premium and loss ratio.

(9) "Retrospective premium" is a premium determined after a coverage period has ended, based on a firm's standard premium, incurred losses, and other preselected parameters for the coverage period.

(10) "Retrospective premium adjustment" is an additional assessment or refund of premium owing to an employer's retrospective premium as of a given evaluation date being more or less than the premium previously paid for the coverage period.

(11) "Performance adjustment factor" means an actuarially determined factor which is multiplied times incurred losses prior to application of the retrospective rating formula, to produce "adjusted incurred losses." This adjustment will produce net retrospective premium credits for participating risks in the aggregate when they have combined experience which is more favorable than other state fund experience for the same coverage period. Conversely, this adjustment will produce net retrospective premium penalties for participating risks when their combined experience is more adverse than other state fund experience for the same coverage period. The purpose of the performance adjustment factor is to retain a consistent economic incentive for those employers to improve their accident cost experience while participating in these plans.

[Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-904, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-904, filed 2/28/85, effective 7/1/85; 81-04-024 (Order 81-02), § 296-17-904, filed 1/30/81.]

WAC 296-17-905 Dividends. Periodically, the department shall determine the total liability existing against the accident fund. If, after such determination, the department finds the accident fund, aside from the reserves deemed actuarially necessary according to recognized insurance principles, contains a surplus, the director, in his/her discretion may declare a dividend to be paid to, or credited to the accounts of, employers who were insured with the department during all or part of the period for which the dividend is declared, according to a uniform formula to be promulgated by the department. Any dividends so declared shall give due consideration to the solvency of the accident fund, not be unfairly discriminatory, and not be promised in advance of such declaration. An employer in default when the dividend is declared shall not be eligible to receive payment as provided by this section but credit will be made towards reducing the employer's obligation to the department.

[Statutory Authority: RCW 51.16.035. 84-06-024 (Order 84-2), § 296-17-905, filed 2/29/84, effective 7/1/84; 81-04-024 (Order 81-02), § 296-17-905, filed 1/30/81; Order 73-22, § 296-17-905, filed 11/9/73, effective 1/1/74.]

WAC 296-17-907 Dividend declarations and distributions. Dividends, if any, will be declared approximately fifteen months after the conclusion of the coverage period with credit or payment made within sixty days of the calculation. No dividend checks will be written for less than ten dollars.

Adjustments to the dividend calculation due to clerical errors will be made if reported to the department within ninety days of the payments. No subsequent adjustments will be made.

[Statutory Authority: RCW 51.16.035. 81-04-024 (Order 81-02), § 296-17-907, filed 1/30/81.]

WAC 296-17-910 Qualifications for employer groups for workers' compensation insurance. The department may insure the workers' compensation obligations of employers as a group, provided the following conditions are met:

(1) All the employers in the group are members of an organization that has been in existence for at least two years.

(2) The organization was formed for a purpose other than that of obtaining workers' compensation coverage.

(3) The business of the employers in the organization is substantially similar, taking into consideration the nature of the work being performed by workers of such employers such that the group comprises substantially homogeneous risks.

(4) The employers in the group constitute at least fifty percent of the total eligible employers in such organization. No groups with less than one hundred participating members will be formed unless the aggregate premium of those members is expected to exceed $150,000 during the coverage period.

(5) The formation and operation of the group program in the organization will substantially improve accident prevention and claims handling for the employers in the group.

Each employer seeking to enroll in a group for workers' compensation insurance must have an industrial insurance account in good standing with the department such that at the time the agreement is processed no outstanding premiums, penalties or assessments are due and quarterly reporting of payroll has been made in accordance with WAC 296–17–310.

The above conditions do not pertain to groupings or combination of persons or risks by way of common ownership or common use and control for experience rating purposes. Combinations for experience rating are governed by WAC 296–17–873.

Final determination of group eligibility under this section rests with the department subject to review under chapter 51.52 RCW.

In providing employer group plans under this rule, the department may consider an employer group as a single employing entity for purposes of dividends or retrospective rating. No employer will be a member of more than one group for the purposes of insuring their workers' compensation obligations.

[Statutory Authority: RCW 51.16.035. 85–06–025 (Order 85–8), § 296–17–910, filed 2/28/85, effective 7/1/85; 84–06–024 (Order 84–2), § 296–17–910, filed 2/29/84, effective 7/1/84; 82–05–019 (Order 82–5), § 296–17–910, filed 2/10/82; 81–04–024 (Order 81–02), § 296–17–910, filed 1/30/81; Order 73–22, § 296–17–910, filed 11/9/73, effective 1/1/74.]

WAC 296–17–911 Group dividends. Group dividends will be calculated provided:

(1) Employers qualify as a group as defined by WAC 296–17–910.

(2) Group submits a satisfactorily completed:

(a) Application for group dividend plan no later than:

(i) April 30 for the coverage period beginning the following July 1;

(ii) July 31 for the coverage period beginning the following October 1;

(iii) October 31 for the coverage period beginning the following January 1;

(iv) January 31 for the coverage period beginning the following April 1.

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled by the 15th day of the month preceding the start of the coverage period;

(c) Group dividend agreement by the 15th day of the month preceding the start of the coverage period.

(3) A dividend is declared under provisions of WAC 296–17–905.

Employers associated with the group at any time during the term of the group dividend agreement will remain parties to the group dividend agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group dividend at the inception of the agreement shall not become participating members in the group during the term of the agreement.

Each employer included as a group member in the group dividend agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

The department may withhold any member's pro rata share from the group's dividend and credit the employer's industrial insurance account when premiums, penalties, or assessments are owing the department.

Dividends will be calculated in accordance with WAC 296–17–905 and are subject to WAC 296–17–907 and 296–17–915.

The payment of the group dividend will be made by the department to the association and shall be distributed to the individual group members by the association.

[Statutory Authority: RCW 51.16.035. 86–06–018 (Order 86–18), § 296–17–911, filed 2/25/86; 85–06–025 (Order 85–8), § 296–17–911, filed 2/28/85, effective 7/1/85; 84–06–024 (Order 84–2), § 296–17–911, filed 2/29/84, effective 7/1/84; 83–05–018 (Order 83–4), § 296–17–911, filed 2/9/83, effective 7/1/83; 82–05–019 (Order 82–5), § 296–17–911, filed 2/10/82; 81–04–024 (Order 81–02), § 296–17–911, filed 1/30/81.]

WAC 296–17–912 Retrospective rating plan. The department shall offer a retrospective rating plan to qualified employers. This plan shall be available on a voluntary basis for the period of one coverage period and may be renewed at the end of that year. The retrospective rating plan shall be consistent with recognized insurance principles and shall be administered according to rules, scales, tables, formulas, schedules and factors promulgated by the department.

[Statutory Authority: RCW 51.16.035. 81–04–024 (Order 81–02), § 296–17–912, filed 1/30/81.]

WAC 296–17–913 Qualifications for employer participation in a retrospective rating plan. The department may enroll interested employers in a retrospective rating plan as a means of insuring their workers' compensation obligations provided the following conditions are met:

(1) The employer submits a satisfactorily completed retrospective rating plan agreement for each employer account to be enrolled.

(2) The employer has an industrial insurance account in good standing with the department such that at the time the agreement is processed no outstanding premium, penalties or assessments are due and quarterly

reporting of payroll has been made in accordance with WAC 296-17-310.

(3) The employer may be required to post a surety bond or other security deposit separate from the cash deposit required for establishing an industrial insurance account with the department:

(a) The employer's surety bond must be on the prescribed forms authorized by the department;

(b) The employer's surety bond shall be secured in one thousand dollar increments provided further that if the estimated maximum premium falls within two increment ranges, a surety bond at the higher level increment shall be obtained;

(c) The employer's surety bond shall remain in full force and effect for the period required retrospective premium calculations are made.

Such surety bond or security deposit would be sufficient to cover the difference between the employer's estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

Final determination as to the employer's eligibility under this section and financial ability to assume the responsibilities under the retrospective rating plan rests with the department subject to review under chapter 51-.52 RCW.

[Statutory Authority: RCW 51.16.035. 85-06-025 (Order 85-8), § 296-17-913, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-913, filed 2/29/84, effective 7/1/84; 82-05-019 (Order 82-5), § 296-17-913, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-913, filed 1/30/81.]

WAC 296-17-914 Retrospective rating formula. Employers who elect to have their premium adjusted under a retrospective rating plan must submit an application on a form provided by the department. This application must be received by the department no later than the 15th day of the month preceding the start of the coverage period. The employer must preselect a "maximum premium ratio" and either Plan A, A1, A2, A3, or B.

The employer's retrospective premium shall be calculated from the formula:

Retrospective Premium =

(Basic Premium Ratio x Standard Premium)

+

(Loss Conversion Factor x Adjusted Incurred Losses)

In the above formula, the basic premium ratio and loss conversion factor are taken from Plan A (WAC 296-17-91901) or Plan B (WAC 296-17-91902) or Plan A1 (WAC 296-17-91903) or Plan A2 (WAC 296-17-91904) or Plan A3 (WAC 296-17-91905) based on the employer's standard premium and preselected maximum premium ratio. Adjusted incurred losses equal incurred losses times the performance adjustment factor applicable to the coverage period. When the aggregate experience of retrospectively rated accounts is superior to other state fund experience, the performance adjustment factor will not exceed 1.00. The performance adjustment factor for each coverage period shall be calculated independently of results for previous coverage periods. Evaluation of incurred losses will be done according to the methods prescribed in WAC 296-17-915.

The maximum retrospective premium is the product of the maximum premium ratio times the employer's standard premium. In the event that the retrospective premium formula produces a value greater than the maximum premium, the retrospective premium shall be reduced to the maximum premium.

Under Plans A1, A2, and A3, the minimum retrospective premium is the product of the minimum premium ratio times the employer's standard premium. If the retrospective premium formula produces a value less than the minimum premium, the retrospective premium shall be increased to the minimum premium.

Under Plan A, a firm may elect to forego the protection of a maximum premium ratio if its financial condition is sufficiently strong and stable so that it could qualify as a self-insurer under the department's guidelines for certification of self-insurers. The basic premium ratio effective January 1, 1986, will be .052 if the firm selects and qualifies for an unlimited maximum premium.

[Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-914, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-914, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-914, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-914, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-914, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-914, filed 1/30/81.]

WAC 296-17-915 Evaluation of incurred losses dividend and retrospective rating plans. The initial evaluation date for each claim arising from incidents occurring during the coverage period shall be approximately twelve months following the end of the coverage period. Each subsequent annual incurred loss evaluation under the retrospective rating plan shall be approximately twelve months following the preceding evaluation date.

The estimated cost of each claim shall include all payments made as of the valuation date and may also include a reserve for future payments consistent with the following evaluation methods applicable to experience rating:

(1) Retroactive adjustments - revision of losses between valuation dates

No claim value shall be revised between valuation dates and no retroactive adjustment of a retrospective premium adjustment shall be made because of disputation concerning the judgment of the claims examiner or because of subsequent developments except as specifically provided in the following cases:

(a) In cases where loss values are included or excluded through mistake other than error of judgment;

(b) In cases where a third party recovery is made;

(c) In cases where the claim qualifies as a second injury claim under the provisions of RCW 51.16.120;

(d) In cases where a claim is officially closed and is determined to be noncompensable.

(2) Third party recovery

In the event of a third party recovery on a claim, the employer shall be charged for a portion of the actual loss amount, gross of such recovery, established on the claim. this portion shall be calculated at the time the recovery is made, and shall be determined by taking the ratio of the total cost of the claim, including attorneys' fees, after recovery, to the total cost of the claim before recovery. If the claim is open at the time the recovery is made, then costs before and after recovery may include an allowance for future claim payments.

(3) Second injury claims

The value of any claim which becomes eligible for second injury relief under the provisions of RCW 51.16-.120, as now or hereafter amended, shall be reduced by the percentage of relief granted.

The incurred losses for each employer shall be determined by multiplying the individual claim cost estimates by loss development factors, and adding the resulting developed losses for all the employer's claims. The following special procedures will be used for making individual claim cost estimates:

Fatal claims - retrospective rating plan

Each fatal claim shall include all payments made as of the valuation date and a pension reserve, if any, based on the annuity value at the time the pension is awarded. Pension costs will not be reevaluated based on events after the pension has been awarded.

Fatal claims - dividend plan

Each fatal claim shall be assigned the "average death value," said value to be the average incurred cost for all fatal claims occurring during the coverage period.

Permanent total claims

Pension costs for permanent total injuries will be based on the annuity value at the time that the pension is awarded. Pension costs will not be reevaluated based on events after the pension has been awarded.

Occupational disease claims

The cost of any occupational disease claim paid from the accident fund and arising from exposure to the disease hazard under two or more employers, shall be prorated to each period of employment. Each employer's share of the claim cost shall be assigned to the coverage period during which the employer last employed the claimant under conditions of injurious exposure, provided the employer's share is at least ten percent of the total claim cost.

[Statutory Authority: RCW 51.16.035. 85-06-025 (Order 85-8), § 296-17-915, filed 2/28/85, effective 7/1/85; 83-05-018 (Order 83-4), § 296-17-915, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-915, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-915, filed 1/30/81.]

WAC 296-17-916 Retrospective premium adjustments--Due and payable. The initial retrospective premium adjustment will be calculated approximately twelve months from the close of the coverage period and annually thereafter for a period of four years. Provided a request is made within ninety days following promulgation of the fifth and final required retrospective premium adjustment by either the employer or department up to two subsequent annual retrospective premium adjustments on the coverage period will be made. The additional adjustments will be identified as the sixth and seventh adjustments and must be requested and made in succession.

Retrospective premium adjustments become due or payable within sixty days of notification of amount. Reevaluation of incurred losses or premium audits will not delay retrospective premium adjustment payments. For employers participating on an individual retrospective rating plan, no retrospective premium adjustment refund check will be written for less than ten dollars. In lieu of refund checks, retrospective premium adjustments of less than ten dollars will be credited to the employer's industrial insurance account.

The department may withhold any member's pro rata share from the group's retrospective premium adjustment refund and credit the employer's industrial insurance account when premiums, penalties, or assessments are owing the department. For employers participating in an individual retrospective rating plan, retrospective premium adjustment refunds may be credited to the employer's industrial insurance account when premiums, penalties, or assessments are owing the department.

[Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-916, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-916, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-916, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-916, filed 2/9/83, effective 7/1/83; 81-04-024 (Order 81-02), § 296-17-916, filed 1/30/81.]

WAC 296-17-917 Qualifications for employer group participation in retrospective rating plan. The department may enroll interested groups in the retrospective rating plan provided:

(1) Employers qualify as a group as defined by WAC 296-17-910.

(2) Employers have industrial insurance accounts in good standing with the department such that at the time the agreement is processed no outstanding premium, penalties, or assessments are due and quarterly reporting of payroll has been made in accordance with WAC 296-17-310.

(3) Group submits a satisfactorily completed:

(a) Application for group retrospective rating plan no later than:

(i) April 30 for the coverage period beginning the following July 1;

(ii) July 31 for the coverage period beginning the following October 1;

(iii) October 31 for the coverage period beginning the following January 1;

(iv) January 31 for the coverage period beginning the following April 1.

(b) Employer's authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled by the 15th day of the month preceding the start of the coverage period;

(c) Group retrospective rating plan agreement by the 15th day of the month preceding the start of the coverage period.

(4) The group may be required to post a surety bond or other security deposit separate from the individual employer's cash deposits required for establishing industrial insurance accounts with the department:

(a) The group's surety bond must be on the prescribed forms authorized by the department;

(b) The group's surety bond shall be secured in one thousand dollar increments provided further that if the group's estimated maximum premium due falls within two increment ranges, a surety bond at the higher level increment shall be obtained;

(c) The group's surety bond shall remain in force and effect for the period required retrospective premium calculations are made.

The amount of such surety bond or other security deposit, if required, may be fixed by the department in any amount equal to or less than the difference between the group's estimated standard premium and the maximum premium due under the retrospective rating plan. Past reporting data and current rate levels will be used to determine the estimated standard premium and maximum percentage retrospective premium due under the plan.

Each employer included as a group member in the group retrospective rating plan agreement will maintain an individual account with the department and will continue to pay quarterly premiums based on assigned risk classification(s) and individual experience rating.

Employers associated with the group at any time during the term of the group retrospective rating plan agreement will remain parties to the agreement for the balance of its term.

Members of the organization or association which do not elect to participate in the group retrospective rating plan at the inception of the agreement shall not become participating members in the group during the term of the agreement.

Final determination of an employer's eligibility to participate in a group plan under this section rests with the department subject to review under chapter 51.52 RCW.

The payment of the group retrospective premium adjustment will be made to or collected from the association. The distribution to the individual group members or collection from the individual group members will be done by the association.

Group retrospective premium adjustment will be calculated according to WAC 296-17-914 and is subject to WAC 296-17-915 and 296-17-916.

[Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-917, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-917, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-917, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-917, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-917, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-917, filed 1/30/81.]

WAC 296-17-918 Limitation of liability indemnification. With the exception of the required authorization for release of insurance data and group membership enrollment application for each employer account to be enrolled, the department disclaims interest in contracts executed between employer groups and participating group members. The department neither approves nor disapproves of any language contained therein and shall be held harmless for misrepresentation of fact(s) or errors of omission or commission stated in the terms of said contract. The department is released and exempt from liability for any dispute or cause of action between an employer group and participating group members or amongst participating group members arising under the contract.

[Statutory Authority: RCW 51.16.035. 84-06-024 (Order 84-2), § 296-17-918, filed 2/29/84, effective 7/1/84.]

WAC 296-17-919 Table I.

RETROSPECTIVE RATING PLANS A, A1, A2, A3, AND B
STANDARD PREMIUM SIZE RANGES
Effective January 1, 1986

Size Group Number	Standard Premium Range	
84	$ 4,296 – $	4,840
83	4,841 –	5,465
82	5,466 –	6,170
81	6,171 –	6,968
80	6,969 –	7,873
79	7,874 –	8,817
78	8,818 –	9,655
77	9,656 –	10,479
76	10,480 –	11,371
75	11,372 –	12,315
74	12,316 –	13,206
73	13,207 –	14,097
72	14,098 –	15,161
71	15,162 –	16,225
70	16,226 –	17,422
69	17,423 –	18,619
68	18,620 –	20,082
67	20,083 –	21,545
66	21,546 –	23,141
65	23,142 –	24,737
64	24,738 –	26,599
63	26,600 –	28,461
62	28,462 –	30,589
61	30,590 –	32,717
60	32,718 –	35,111
59	35,112 –	37,771
58	37,772 –	40,431
57	40,432 –	43,357
56	43,358 –	46,549
55	46,550 –	49,874
54	49,875 –	53,465
53	53,466 –	57,322
52	57,323 –	61,445
51	61,446 –	65,967
50	65,968 –	70,622
49	70,623 –	75,809
48	75,810 –	81,262
47	81,263 –	87,247
46	87,248 –	93,498

Size Group Number	Standard Premium Range		Size Group Number	Standard Premium Range	
45	93,499 –	100,281	21	638,400 –	694,259
44	100,282 –	107,729	20	694,260 –	756,769
43	107,730 –	116,108	19	756,770 –	823,269
42	116,109 –	125,019	18	823,270 –	897,749
41	125,020 –	134,329	17	897,750 –	977,549
40	134,330 –	144,969	16	977,550 –	1,066,659
39	144,970 –	156,939	15	1,066,660 –	1,210,299
38	156,940 –	168,909	14	1,210,300 –	1,373,889
37	168,910 –	182,209	13	1,373,890 –	1,557,429
36	182,210 –	196,839	12	1,557,430 –	2,080,119
35	196,840 –	215,459	11	2,080,120 –	2,629,409
34	215,460 –	232,749	10	2,629,410 –	3,213,279
33	232,750 –	252,699	9	3,213,280 –	4,016,599
32	252,700 –	275,309	8	4,016,600 –	5,164,389
31	275,310 –	299,249	7	5,164,390 –	6,856,149
30	299,250 –	324,519	6	6,856,150 –	9,581,319
29	324,520 –	352,449	5	9,581,320 & over	
28	352,450 –	384,369			
27	384,370 –	417,619			
26	417,620 –	454,859			
25	454,860 –	494,759			
24	494,760 –	538,649			
23	538,650 –	586,529			
22	586,530 –	638,399			

[Statutory Authority: RCW 51.16.035. 86-06-018 (Order 86-18), § 296-17-919, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-919, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-919, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-919, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-919, filed 2/10/82; 81-24-042 (Order 81-30), § 296-17-919, filed 11/30/81, effective 1/1/82; 81-04-024 (Order 81-02), § 296-17-919, filed 1/30/81.]

WAC 296-17-91901 Table II.

RETROSPECTIVE RATING PLAN A
BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .692
Effective January 1, 1986

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
84	.975	.955	.942	.929	.918	.910	.901	.895	.887	.881	.869	.858	.848	.829
83	.973	.954	.938	.924	.912	.902	.894	.886	.879	.872	.860	.848	.838	.817
82	.972	.950	.932	.918	.906	.895	.886	.879	.870	.863	.850	.838	.827	.806
81	.967	.946	.925	.913	.899	.889	.878	.869	.862	.854	.840	.828	.816	.795
80	.966	.940	.921	.906	.891	.881	.870	.862	.853	.845	.830	.818	.806	.781
79	.964	.937	.915	.900	.884	.873	.863	.853	.844	.836	.821	.808	.794	.770
78	.958	.932	.911	.895	.880	.866	.856	.845	.836	.827	.811	.797	.783	.757
77	.957	.929	.905	.888	.873	.862	.848	.839	.827	.819	.802	.787	.772	.746
76	.955	.927	.902	.884	.865	.853	.840	.829	.818	.809	.792	.774	.760	.733
75	.954	.920	.896	.877	.860	.845	.830	.820	.809	.799	.781	.764	.749	.720
74	.948	.918	.892	.869	.852	.837	.823	.811	.800	.790	.770	.754	.737	.708
73	.946	.911	.885	.863	.845	.829	.816	.803	.790	.781	.760	.743	.726	.695
72	.944	.908	.878	.858	.840	.824	.809	.794	.783	.772	.750	.732	.714	.682
71	.938	.901	.874	.850	.831	.814	.799	.785	.772	.761	.739	.721	.701	.667
70	.936	.899	.867	.843	.824	.807	.790	.776	.762	.751	.729	.707	.690	.654
69	.935	.892	.859	.838	.815	.797	.782	.767	.753	.740	.717	.697	.678	.642
68	.928	.884	.855	.829	.807	.789	.772	.756	.742	.731	.707	.684	.664	.628
67	.925	.882	.847	.821	.797	.779	.763	.747	.732	.720	.694	.673	.652	.615
66	.918	.873	.839	.813	.789	.771	.753	.737	.721	.710	.682	.661	.640	.601
65	.917	.870	.835	.805	.783	.762	.744	.728	.712	.698	.671	.648	.628	.589
64	.910	.863	.827	.800	.775	.753	.735	.717	.701	.686	.661	.636	.614	.576
63	.907	.855	.819	.790	.766	.743	.724	.707	.691	.676	.649	.623	.603	.562
62	.900	.851	.810	.783	.756	.734	.715	.697	.681	.665	.636	.610	.589	.549

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
61	.898	.844	.807	.773	.748	.724	.704	.687	.670	.654	.625	.599	.575	.535
60	.890	.836	.798	.765	.738	.714	.695	.674	.657	.641	.612	.585	.562	.520
59	.888	.833	.790	.756	.730	.705	.684	.663	.646	.629	.598	.572	.549	.506
58	.881	.826	.781	.747	.719	.695	.674	.652	.635	.617	.587	.560	.536	.493
57	.879	.817	.772	.737	.710	.684	.661	.641	.624	.607	.574	.546	.522	.480
56	.871	.813	.763	.729	.700	.674	.650	.631	.609	.592	.561	.534	.509	.466
55	.863	.805	.754	.718	.690	.663	.639	.620	.598	.580	.548	.521	.495	.454
54	.860	.795	.745	.709	.680	.653	.628	.606	.587	.570	.536	.507	.482	.440
53	.851	.786	.736	.699	.665	.639	.617	.594	.572	.554	.522	.495	.470	.427
52	.842	.777	.725	.688	.656	.628	.603	.583	.561	.543	.510	.480	.457	.416
51	.833	.767	.716	.678	.645	.617	.591	.568	.549	.531	.498	.468	.444	.402
50	.825	.758	.706	.667	.633	.606	.580	.556	.534	.517	.483	.456	.429	.389
49	.822	.749	.696	.658	.623	.591	.565	.544	.522	.503	.470	.442	.417	.377
48	.813	.739	.685	.643	.608	.579	.553	.530	.510	.489	.457	.429	.405	.364
47	.803	.729	.675	.631	.596	.568	.541	.517	.495	.477	.444	.417	.390	.352
46	.795	.719	.664	.620	.585	.553	.526	.502	.482	.464	.432	.404	.379	.341
45	.786	.709	.648	.605	.569	.540	.514	.490	.467	.449	.417	.391	.369	.331
44	.775	.694	.638	.593	.556	.524	.499	.478	.455	.437	.406	.380	.357	.320
43	.766	.682	.621	.577	.541	.512	.486	.462	.443	.426	.394	.367	.347	.311
42	.757	.672	.610	.565	.530	.497	.471	.450	.428	.411	.379	.354	.333	.298
41	.747	.662	.600	.554	.514	.485	.459	.435	.415	.398	.367	.342	.320	.285
40	.737	.645	.589	.538	.502	.473	.446	.423	.401	.386	.354	.328	.306	.274
39	.727	.635	.572	.527	.490	.457	.431	.408	.389	.371	.340	.316	.295	.262
38	.717	.625	.561	.511	.474	.445	.419	.394	.376	.356	.328	.303	.282	.250
37	.700	.608	.544	.499	.462	.429	.403	.379	.361	.343	.314	.290	.270	.239
36	.689	.596	.533	.481	.445	.417	.390	.367	.349	.332	.301	.279	.258	.227
35	.671	.578	.515	.469	.428	.400	.375	.354	.334	.316	.289	.266	.247	.217
34	.653	.560	.497	.452	.416	.388	.362	.339	.321	.305	.276	.256	.236	.207
33	.642	.542	.484	.434	.399	.371	.346	.326	.306	.290	.264	.243	.225	.198
32	.623	.523	.466	.422	.386	.355	.334	.312	.294	.279	.253	.232	.215	.189
31	.605	.511	.449	.405	.370	.342	.318	.299	.282	.267	.243	.222	.207	.181
30	.586	.493	.431	.388	.357	.330	.306	.285	.268	.255	.230	.212	.197	.174
29	.568	.475	.418	.374	.340	.314	.291	.273	.257	.243	.220	.203	.189	.167
28	.549	.457	.401	.357	.324	.301	.279	.261	.244	.230	.207	.191	.177	.154
27	.537	.444	.384	.345	.311	.285	.262	.244	.229	.216	.193	.176	.160	.138
26	.519	.427	.371	.329	.295	.269	.249	.228	.215	.201	.178	.161	.145	.124
25	.499	.408	.353	.311	.281	.256	.233	.215	.200	.186	.165	.147	.133	.113
24	.480	.390	.335	.298	.265	.241	.222	.205	.189	.176	.157	.141	.128	.108
23	.454	.371	.317	.280	.253	.229	.210	.194	.179	.168	.149	.134	.122	.104
22	.435	.352	.299	.263	.237	.216	.196	.184	.171	.160	.141	.127	.116	.100
21	.408	.333	.285	.251	.225	.203	.186	.171	.161	.152	.134	.122	.112	.097
20	.388	.314	.268	.234	.209	.190	.174	.161	.151	.141	.125	.114	.105	.091
19	.377	.301	.251	.222	.196	.178	.162	.149	.139	.131	.116	.105	.097	.084
18	.358	.283	.238	.205	.181	.163	.148	.137	.127	.119	.106	.098	.090	.079
17	.339	.265	.221	.189	.169	.152	.137	.127	.117	.110	.098	.090	.083	.074
16	.319	.247	.204	.176	.154	.137	.127	.117	.108	.102	.091	.083	.078	.069
15	.300	.229	.190	.164	.143	.128	.117	.108	.101	.095	.086	.079	.074	.066
14	.291	.217	.174	.154	.134	.123	.112	.103	.097	.091	.083	.078	.072	.065
13	.275	.200	.163	.142	.129	.116	.107	.099	.094	.088	.081	.076	.071	.064
12	.263	.182	.152	.135	.121	.111	.102	.096	.089	.086	.079	.073	.069	.063
11	.246	.162	.138	.126	.114	.105	.098	.092	.086	.083	.076	.071	.068	.062
10	.235	.147	.129	.117	.107	.098	.093	.088	.083	.079	.074	.069	.066	.061
9	.216	.133	.119	.109	.101	.094	.088	.083	.079	.077	.072	.068	.065	.061
8	.189	.122	.111	.102	.095	.088	.083	.079	.077	.074	.069	.066	.063	.060
7	.160	.112	.101	.095	.088	.084	.079	.076	.074	.071	.067	.063	.062	.059
6	.131	.101	.095	.088	.083	.079	.076	.073	.070	.068	.064	.062	.061	.058
5	.131	.093	.087	.081	.078	.075	.071	.069	.067	.065	.062	.061	.059	.057

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-17-002 (Order 86-29), § 296-17-91901, filed 8/8/86. Statutory Authority: RCW 51-.16.035. 86-06-018 (Order 86-18), § 296-17-91901, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-91901, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-91901, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-91901, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-91901, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91901, filed 1/30/81.]

WAC 296-17-91902 Table III.

RETROSPECTIVE RATING PLAN B
BASIC PREMIUM RATIOS
AND LOSS CONVERSION FACTORS
Effective January 1, 1986

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.998	.997	.995	.993	.992	.990	.988	.987	.985	.983	.980	.977	.974	.967
	Loss Conversion Factor	.002	.003	.005	.007	.008	.010	.012	.013	.015	.017	.020	.023	.026	.033
83	Basic Premium Ratio	.998	.996	.995	.993	.991	.989	.987	.986	.984	.982	.978	.975	.971	.964
	Loss Conversion Factor	.002	.004	.005	.007	.009	.011	.013	.014	.016	.018	.022	.025	.029	.036
82	Basic Premium Ratio	.998	.996	.994	.992	.990	.988	.986	.984	.982	.980	.977	.973	.969	.961
	Loss Conversion Factor	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.023	.027	.031	.039
81	Basic Premium Ratio	.998	.996	.994	.991	.989	.987	.985	.983	.981	.979	.974	.970	.966	.957
	Loss Conversion Factor	.002	.004	.006	.009	.011	.013	.015	.017	.019	.021	.026	.030	.034	.043
80	Basic Premium Ratio	.998	.995	.993	.991	.989	.986	.984	.982	.980	.977	.973	.968	.964	.955
	Loss Conversion Factor	.002	.005	.007	.009	.011	.014	.016	.018	.020	.023	.027	.032	.036	.045
79	Basic Premium Ratio	.998	.995	.993	.990	.988	.986	.983	.981	.978	.976	.971	.966	.961	.952
	Loss Conversion Factor	.002	.005	.007	.010	.012	.014	.017	.019	.022	.024	.029	.034	.039	.048
78	Basic Premium Ratio	.997	.995	.992	.989	.987	.984	.982	.979	.976	.974	.968	.963	.958	.947
	Loss Conversion Factor	.003	.005	.008	.011	.013	.016	.018	.021	.024	.026	.032	.037	.042	.053
77	Basic Premium Ratio	.997	.994	.991	.988	.985	.982	.979	.976	.973	.971	.965	.959	.953	.941
	Loss Conversion Factor	.003	.006	.009	.012	.015	.018	.021	.024	.027	.029	.035	.041	.047	.059
76	Basic Premium Ratio	.997	.994	.991	.988	.985	.982	.979	.975	.972	.969	.963	.957	.951	.939
	Loss Conversion Factor	.003	.006	.009	.012	.015	.018	.021	.025	.028	.031	.037	.043	.049	.061
75	Basic Premium Ratio	.997	.994	.990	.987	.984	.981	.978	.975	.971	.968	.962	.956	.949	.937
	Loss Conversion Factor	.003	.006	.010	.013	.016	.019	.022	.025	.029	.032	.038	.044	.051	.063
74	Basic Premium Ratio	.997	.993	.990	.986	.983	.979	.976	.972	.969	.965	.959	.952	.945	.931
	Loss Conversion Factor	.003	.007	.010	.014	.017	.021	.024	.028	.031	.035	.041	.048	.055	.069
73	Basic Premium Ratio	.996	.993	.989	.985	.981	.978	.974	.970	.966	.963	.955	.948	.940	.925
	Loss Conversion Factor	.004	.007	.011	.015	.019	.022	.026	.030	.034	.037	.045	.052	.060	.075
72	Basic Premium Ratio	.996	.992	.988	.983	.979	.975	.971	.967	.963	.959	.950	.942	.934	.917
	Loss Conversion Factor	.004	.008	.012	.017	.021	.025	.029	.033	.037	.041	.050	.058	.066	.083
71	Basic Premium Ratio	.995	.991	.986	.982	.977	.972	.968	.963	.958	.954	.945	.935	.926	.908
	Loss Conversion Factor	.005	.009	.014	.018	.023	.028	.032	.037	.042	.046	.055	.065	.074	.092
70	Basic Premium Ratio	.995	.990	.985	.980	.974	.969	.964	.959	.954	.949	.939	.928	.918	.898
	Loss Conversion Factor	.005	.010	.015	.020	.026	.031	.036	.041	.046	.051	.061	.072	.082	.102
69	Basic Premium Ratio	.994	.989	.983	.978	.972	.967	.961	.956	.950	.945	.933	.922	.911	.889
	Loss Conversion Factor	.006	.011	.017	.022	.028	.033	.039	.044	.050	.055	.067	.078	.089	.111
68	Basic Premium Ratio	.994	.988	.982	.977	.971	.965	.959	.953	.947	.941	.930	.918	.906	.883
	Loss Conversion Factor	.006	.012	.018	.023	.029	.035	.041	.047	.053	.059	.070	.082	.094	.117
67	Basic Premium Ratio	.994	.988	.981	.975	.969	.963	.957	.950	.944	.938	.926	.913	.901	.876
	Loss Conversion Factor	.006	.012	.019	.025	.031	.037	.043	.050	.056	.062	.074	.087	.099	.124
66	Basic Premium Ratio	.993	.987	.980	.973	.966	.960	.953	.946	.939	.933	.919	.906	.892	.865
	Loss Conversion Factor	.007	.013	.020	.027	.034	.040	.047	.054	.061	.067	.081	.094	.108	.135
65	Basic Premium Ratio	.993	.985	.978	.971	.964	.956	.949	.942	.935	.927	.913	.898	.884	.855
	Loss Conversion Factor	.007	.015	.022	.029	.036	.044	.051	.058	.065	.073	.087	.102	.116	.145
64	Basic Premium Ratio	.992	.984	.977	.969	.961	.953	.946	.938	.930	.922	.907	.891	.875	.844
	Loss Conversion Factor	.008	.016	.023	.031	.039	.047	.054	.062	.070	.078	.093	.109	.125	.156
63	Basic Premium Ratio	.992	.983	.975	.967	.959	.950	.942	.934	.925	.917	.900	.884	.867	.834
	Loss Conversion Factor	.008	.017	.025	.033	.041	.050	.058	.066	.075	.083	.100	.116	.133	.166
62	Basic Premium Ratio	.991	.982	.973	.964	.956	.947	.938	.929	.920	.911	.893	.876	.858	.822
	Loss Conversion Factor	.009	.018	.027	.036	.044	.053	.062	.071	.080	.089	.107	.124	.142	.178
61	Basic Premium Ratio	.990	.981	.971	.962	.952	.943	.933	.923	.914	.904	.885	.866	.847	.808
	Loss Conversion Factor	.010	.019	.029	.038	.048	.057	.067	.077	.086	.096	.115	.134	.153	.192
60	Basic Premium Ratio	.990	.979	.969	.958	.948	.937	.927	.917	.906	.896	.875	.854	.833	.791
	Loss Conversion Factor	.010	.021	.031	.042	.052	.063	.073	.083	.094	.104	.125	.146	.167	.209

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
59	Basic Premium Ratio	.989	.977	.966	.955	.943	.932	.920	.909	.898	.886	.864	.841	.818	.773
	Loss Conversion Factor	.011	.023	.034	.045	.057	.068	.080	.091	.102	.114	.136	.159	.182	.227
58	Basic Premium Ratio	.988	.975	.963	.951	.938	.926	.914	.901	.889	.877	.852	.827	.803	.753
	Loss Conversion Factor	.012	.025	.037	.049	.062	.074	.086	.099	.111	.123	.148	.173	.197	.247
57	Basic Premium Ratio	.987	.973	.960	.946	.933	.919	.906	.893	.879	.866	.839	.812	.785	.732
	Loss Conversion Factor	.013	.027	.040	.054	.067	.081	.094	.107	.121	.134	.161	.188	.215	.268
56	Basic Premium Ratio	.986	.971	.957	.942	.928	.913	.899	.884	.870	.855	.826	.797	.768	.710
	Loss Conversion Factor	.014	.029	.043	.058	.072	.087	.101	.116	.130	.145	.174	.203	.232	.290
55	Basic Premium Ratio	.984	.969	.953	.938	.922	.906	.891	.875	.860	.844	.813	.782	.750	.688
	Loss Conversion Factor	.016	.031	.047	.062	.078	.094	.109	.125	.140	.156	.187	.218	.250	.312
54	Basic Premium Ratio	.983	.967	.950	.933	.917	.900	.883	.867	.850	.833	.800	.767	.733	.667
	Loss Conversion Factor	.017	.033	.050	.067	.083	.100	.117	.133	.150	.167	.200	.233	.267	.333
53	Basic Premium Ratio	.982	.964	.947	.929	.911	.893	.876	.858	.840	.822	.787	.751	.717	.646
	Loss Conversion Factor	.018	.036	.053	.071	.089	.107	.124	.142	.160	.178	.213	.249	.283	.354
52	Basic Premium Ratio	.981	.962	.943	.924	.905	.887	.868	.849	.830	.811	.773	.735	.697	.622
	Loss Conversion Factor	.019	.038	.057	.076	.095	.113	.132	.151	.170	.189	.227	.265	.303	.378
51	Basic Premium Ratio	.980	.960	.940	.919	.899	.879	.859	.839	.819	.798	.758	.718	.677	.597
	Loss Conversion Factor	.020	.040	.060	.081	.101	.121	.141	.161	.181	.202	.242	.282	.323	.403
50	Basic Premium Ratio	.978	.957	.935	.913	.891	.870	.848	.826	.804	.783	.739	.696	.652	.565
	Loss Conversion Factor	.022	.043	.065	.087	.109	.130	.152	.174	.196	.217	.261	.304	.348	.435
49	Basic Premium Ratio	.977	.954	.930	.907	.884	.861	.837	.814	.791	.768	.721	.675	.628	.535
	Loss Conversion Factor	.023	.046	.070	.093	.116	.139	.163	.186	.209	.232	.279	.325	.372	.465
48	Basic Premium Ratio	.975	.950	.926	.901	.876	.851	.826	.801	.777	.752	.702	.652	.603	.503
	Loss Conversion Factor	.025	.050	.074	.099	.124	.149	.174	.199	.223	.248	.298	.348	.397	.497
47	Basic Premium Ratio	.973	.947	.920	.893	.867	.840	.814	.787	.760	.734	.680	.627	.574	.467
	Loss Conversion Factor	.027	.053	.080	.107	.133	.160	.186	.213	.240	.266	.320	.373	.426	.533
46	Basic Premium Ratio	.972	.943	.915	.887	.859	.830	.802	.774	.745	.717	.660	.604	.547	.434
	Loss Conversion Factor	.028	.057	.085	.113	.141	.170	.198	.226	.255	.283	.340	.396	.453	.566
45	Basic Premium Ratio	.970	.940	.910	.880	.850	.820	.790	.760	.730	.700	.640	.579	.519	.399
	Loss Conversion Factor	.030	.060	.090	.120	.150	.180	.210	.240	.270	.300	.360	.421	.481	.601
44	Basic Premium Ratio	.968	.936	.904	.872	.840	.808	.776	.744	.712	.680	.616	.552	.488	.360
	Loss Conversion Factor	.032	.064	.096	.128	.160	.192	.224	.256	.288	.320	.384	.448	.512	.640
43	Basic Premium Ratio	.966	.932	.898	.864	.829	.795	.761	.727	.693	.659	.591	.522	.454	.318
	Loss Conversion Factor	.034	.068	.102	.136	.171	.205	.239	.273	.307	.341	.409	.478	.546	.682
42	Basic Premium Ratio	.963	.926	.889	.853	.816	.779	.742	.705	.668	.631	.558	.484	.410	.263
	Loss Conversion Factor	.037	.074	.111	.147	.184	.221	.258	.295	.332	.369	.442	.516	.590	.737
41	Basic Premium Ratio	.960	.920	.880	.840	.799	.759	.719	.679	.639	.599	.519	.438	.358	.198
	Loss Conversion Factor	.040	.080	.120	.160	.201	.241	.281	.321	.361	.401	.481	.562	.642	.802
40	Basic Premium Ratio	.957	.913	.870	.826	.783	.739	.696	.652	.609	.565	.479	.392	.305	.131
	Loss Conversion Factor	.043	.087	.130	.174	.217	.261	.304	.348	.391	.435	.521	.608	.695	.869
39	Basic Premium Ratio	.953	.906	.859	.812	.765	.717	.670	.623	.576	.529	.435	.341	.246	.058
	Loss Conversion Factor	.047	.094	.141	.188	.235	.283	.330	.377	.424	.471	.565	.659	.754	.942
38	Basic Premium Ratio	.949	.898	.847	.796	.745	.694	.643	.592	.541	.490	.387	.285	.183	.000
	Loss Conversion Factor	.051	.102	.153	.204	.255	.306	.357	.408	.459	.510	.613	.715	.817	.993
37	Basic Premium Ratio	.944	.889	.833	.777	.721	.666	.610	.554	.498	.443	.331	.220	.108	.000
	Loss Conversion Factor	.056	.111	.167	.223	.279	.334	.390	.446	.502	.557	.669	.780	.892	.971
36	Basic Premium Ratio	.940	.880	.820	.761	.701	.641	.581	.521	.461	.402	.282	.162	.043	.000
	Loss Conversion Factor	.060	.120	.180	.239	.299	.359	.419	.479	.539	.598	.718	.838	.957	.951
35	Basic Premium Ratio	.935	.870	.804	.739	.674	.609	.544	.479	.413	.348	.218	.087	.000	.000
	Loss Conversion Factor	.065	.130	.196	.261	.326	.391	.456	.521	.587	.652	.782	.913	.988	.933
34	Basic Premium Ratio	.929	.858	.787	.717	.646	.575	.504	.433	.362	.291	.150	.008	.000	.000
	Loss Conversion Factor	.071	.142	.213	.283	.354	.425	.496	.567	.638	.709	.850	.992	.968	.916
33	Basic Premium Ratio	.922	.845	.767	.689	.612	.534	.456	.379	.301	.223	.068	.000	.000	.000
	Loss Conversion Factor	.078	.155	.233	.311	.388	.466	.544	.621	.699	.777	.932	.977	.945	.900

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
32	Basic Premium Ratio	.916	.832	.747	.663	.579	.495	.410	.326	.242	.158	.000	.000	.000	.000
	Loss Conversion Factor	.084	.168	.253	.337	.421	.505	.590	.674	.758	.842	.997	.958	.927	.885
31	Basic Premium Ratio	.908	.816	.724	.632	.540	.448	.356	.264	.172	.080	.000	.000	.000	.000
	Loss Conversion Factor	.092	.184	.276	.368	.460	.552	.644	.736	.828	.920	.972	.937	.911	.873
30	Basic Premium Ratio	.900	.799	.699	.598	.498	.397	.297	.196	.096	.000	.000	.000	.000	.000
	Loss Conversion Factor	.100	.201	.301	.402	.502	.603	.703	.804	.904	.999	.953	.920	.895	.862
29	Basic Premium Ratio	.889	.779	.668	.558	.447	.336	.226	.115	.005	.000	.000	.000	.000	.000
	Loss Conversion Factor	.111	.221	.332	.442	.553	.664	.774	.885	.995	.974	.934	.906	.882	.851
28	Basic Premium Ratio	.878	.757	.635	.513	.392	.270	.148	.027	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.122	.243	.365	.487	.608	.730	.852	.973	.977	.952	.915	.887	.865	.838
27	Basic Premium Ratio	.865	.730	.594	.459	.324	.189	.054	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.135	.270	.406	.541	.676	.811	.946	.981	.952	.929	.893	.866	847	.819
26	Basic Premium Ratio	.849	.699	.548	.398	.247	.097	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.151	.301	.452	.602	.753	.903	.988	.954	.929	.906	.873	.849	.829	.802
25	Basic Premium Ratio	.832	.664	.497	.329	.161	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.168	.336	.503	.671	.839	.999	.961	.930	.906	.885	.855	.832	.814	.790
24	Basic Premium Ratio	.812	.624	.436	.247	.059	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.188	.376	.564	.753	.941	.971	.938	.911	.889	.874	.843	.822	.807	.785
23	Basic Premium Ratio	.788	.576	.363	.151	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.212	.424	.637	.849	.986	.947	.915	.892	.873	.856	.832	.814	.800	.781
22	Basic Premium Ratio	.757	.513	.270	.027	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.243	.487	.730	.973	.958	.924	.898	.875	.858	.844	.822	.806	.793	.777
21	Basic Premium Ratio	.719	.438	.158	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.281	.562	.842	.976	.933	.904	.880	.861	.844	.832	.813	.799	.788	.771
20	Basic Premium Ratio	.674	.348	.022	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.326	.652	.978	.952	.913	.884	.862	.846	.831	.820	.803	.790	.780	.766
19	Basic Premium Ratio	.622	.245	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.378	.755	.979	.926	.891	.865	.845	.831	.818	.807	.792	.780	.772	.760
18	Basic Premium Ratio	.562	.124	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.438	.876	.951	.904	.871	.849	.830	.816	.805	.796	.782	.772	.764	755
17	Basic Premium Ratio	.479	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.521	.995	.926	.883	.853	.832	.816	.803	.794	.786	.773	.765	.759	.750
16	Basic Premium Ratio	.374	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.626	.962	.902	.863	.837	.818	.803	.793	.784	.777	.767	.759	.753	.746
15	Basic Premium Ratio	.226	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.774	.943	.879	.844	.822	.806	.793	.783	.775	.770	.760	.755	.749	.743
14	Basic Premium Ratio	.148	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.852	.918	.859	.830	.812	.798	.787	.779	.771	.766	.757	.752	.748	.742
13	Basic Premium Ratio	.058	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.942	.899	.839	.818	.803	.791	.782	.775	.767	.764	.755	.750	.746	.741
12	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.992	.877	.825	.808	.795	.784	.776	.770	.764	.760	.753	.748	.745	.740
11	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.972	.861	.811	.798	.787	.778	.771	.766	.761	.757	.751	.747	.743	.739
10	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.950	.831	.799	.789	.780	.773	.766	.761	.757	.754	.749	.745	.742	.738
9	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.930	.802	.791	.782	.773	.767	.762	.758	.754	.752	.747	.743	.741	.737
8	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.899	.791	.781	.774	.767	.762	.758	.754	.751	.749	.744	.742	.740	.736
7	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.865	.780	.773	.767	.762	.757	.754	.751	.748	.747	.743	.740	.739	.736

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
6	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.829	.773	.766	.760	.757	.752	.750	.747	.745	.744	.741	.739	.737	.735
5	Basic Premium Ratio	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Loss Conversion Factor	.779	.763	.758	.755	.751	.749	.747	.744	.742	.741	.738	.737	.736	.735

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-17-002 (Order 86-29), § 296-17-91902, filed 8/8/86. Statutory Authority: RCW 51-.16.035. 86-06-018 (Order 86-18), § 296-17-91902, filed 2/25/86; 85-06-025 (Order 85-8), § 296-17-91902, filed 2/28/85, effective 7/1/85; 84-06-024 (Order 84-2), § 296-17-91902, filed 2/29/84, effective 7/1/84; 83-05-018 (Order 83-4), § 296-17-91902, filed 2/9/83, effective 7/1/83; 82-05-019 (Order 82-5), § 296-17-91902, filed 2/10/82; 81-04-024 (Order 81-02), § 296-17-91902, filed 1/30/81.]

WAC 296-17-91903 Table IV.

RETROSPECTIVE RATING PLAN A1
MINIMUM PREMIUM RATIOS
BASIC PREMIUM RATIO = .052
LOSS CONVERSION FACTOR = .692
Effective January 1, 1986

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
84	.996	.990	.986	.982	.978	.973	.969	.966	.961	.957	.949	.941	.933	.919
83	.996	.989	.985	.981	.976	.971	.967	.963	.958	.954	.945	.936	.928	.913
82	.995	.989	.984	.979	.974	.969	.964	.960	.955	.950	.941	.932	.924	.908
81	.995	.988	.983	.978	.973	.966	.962	.957	.952	.947	.937	.927	.919	.902
80	.995	.987	.981	.976	.971	.964	.959	.955	.949	.944	.934	.923	.914	.896
79	.994	.986	.980	.975	.969	.962	.957	.952	.946	.940	.930	.919	.909	.891
78	.994	.985	.979	.973	.967	.960	.954	.949	.943	.937	.926	.914	.904	.885
77	.993	.984	.978	.972	.965	.958	.952	.946	.940	.933	.922	.910	.900	.880
76	.993	.984	.977	.970	.964	.956	.949	.943	.937	.930	.918	.905	.895	.874
75	.993	.983	.976	.969	.962	.953	.947	.941	.934	.927	.914	.901	.890	.868
74	.992	.982	.975	.967	.960	.951	.944	.938	.931	.923	.910	.896	.885	.863
73	.992	.981	.973	.966	.958	.949	.942	.935	.928	.920	.906	.892	.880	.857
72	.991	.980	.972	.965	.956	.947	.939	.932	.925	.916	.902	.888	.876	.851
71	.991	.980	.971	.963	.955	.945	.937	.929	.922	.913	.899	.883	.871	.846
70	.991	.979	.970	.962	.953	.942	.934	.927	.919	.910	.895	.879	.866	.840
69	.990	.978	.969	.960	.951	.940	.932	.924	.916	.906	.891	.874	.861	.834
68	.990	.977	.968	.959	.949	.938	.929	.921	.913	.903	.887	.870	.856	.829
67	.989	.976	.967	.957	.948	.936	.927	.918	.910	.899	.883	.866	.851	.823
66	.989	.976	.966	.956	.946	.934	.924	.915	.907	.896	.879	.861	.847	.817
65	.989	.975	.964	.954	.944	.932	.921	.913	.903	.893	.875	.857	.842	.812
64	.988	.974	.963	.953	.942	.929	.919	.910	.900	.889	.871	.852	.837	.806
63	.988	.973	.962	.951	.940	.927	.916	.907	.897	.886	.867	.848	.832	.801
62	.987	.972	.961	.950	.939	.925	.914	.904	.894	.882	.864	.844	.827	.795
61	.987	.971	.960	.948	.937	.923	.911	.901	.891	.879	.860	.839	.823	.789
60	.987	.971	.959	.947	.935	.921	.909	.899	.888	.875	.856	.835	.818	.784
59	.986	.970	.958	.945	.933	.918	.906	.896	.885	.872	.852	.830	.813	.778
58	.986	.969	.957	.944	.931	.916	.904	.893	.882	.869	.848	.826	.808	.772
57	.985	.968	.955	.942	.930	.914	.901	.890	.879	.865	.844	.821	.803	767
56	.985	.967	.954	.941	.928	.912	.899	.887	.876	.862	.840	.817	.798	.761
55	.985	.967	.953	.940	.926	.910	.896	.885	.873	.859	.836	.813	.794	.757
54	.984	.966	.952	.938	.924	.908	.894	.882	.870	.856	.834	.810	.791	.753
53	.984	.965	.951	.937	.922	.905	.892	.880	.867	.853	.831	.807	.787	.750
52	.983	.964	.950	.935	.921	.903	.890	.878	.864	.851	.828	.804	.784	.746
51	.983	.963	.949	.934	.919	.901	.888	.875	.862	.848	.825	.801	.781	.742
50	.983	.963	.948	.932	.917	.899	.886	.873	.859	.845	.822	.798	.778	.739
49	.982	.962	.946	.931	.915	.897	.883	.871	.857	.843	.819	.795	.774	.735
48	.982	.961	.945	.929	.913	.895	.881	.868	.855	.840	.816	.792	.771	.732
47	.981	.960	.944	.928	.912	.894	.879	.866	.852	.837	.813	.789	.768	.728
46	.981	.959	.943	.926	.910	.892	.877	.863	.850	.835	.810	.786	.765	.725
45	.981	.958	.942	.925	.909	.890	.875	.861	.847	.832	.807	.783	.761	.721
44	.980	.958	.941	.923	.907	.888	.873	.859	.845	.829	.804	.780	.758	.718
43	.980	.957	.940	.922	.905	.886	.871	.856	.843	.827	.801	.777	.755	.714

Maximum Premium Ratio:	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group														
42	.980	.956	.939	.921	.904	.884	.869	.854	.840	.824	.798	.774	.752	.710
41	.979	.956	.937	.919	.902	.882	.867	.852	.838	.821	.796	.771	.748	.707
40	.979	.955	.936	.918	.901	.881	.865	.849	.835	.819	.793	.768	.745	.703
39	.979	.954	.935	.916	.899	.879	.863	.847	.833	.816	.790	.765	.742	.700
38	.978	.954	.934	.915	.897	.877	.860	.845	.831	.813	.787	.762	.739	.696
37	.978	.953	.933	.914	.896	.875	.858	.842	.828	.811	.784	.759	.735	.693
36	.978	.952	.932	.912	.894	.873	.856	.840	.826	.808	.781	.756	.732	.689
35	.978	.951	.930	.911	.892	.871	.854	.838	.824	.806	.779	.754	.730	.687
34	.977	.950	.929	.909	.891	.870	.852	.836	.822	.804	.777	.752	.728	.686
33	.977	.950	.928	.908	.889	.868	.850	.834	.820	.802	.775	.750	.726	.684
32	.976	.949	.927	.906	.887	.866	.848	.832	.818	.799	.772	.748	.724	.682
31	.976	.948	.926	.905	.886	.865	.847	.830	.816	.797	.770	.746	.722	.681
30	.975	.947	.925	.904	.884	.863	.845	.828	.814	.795	.768	.744	.719	.679
29	.975	.946	.924	.902	.882	.861	.843	.826	.812	.793	.766	.742	.717	.677
28	.974	.946	.923	.901	.881	.859	.841	.824	.810	.791	.764	.740	.715	.675
27	.974	.945	.922	.899	.879	.858	.839	.822	.808	.789	.762	.738	.713	.674
26	.974	.944	.921	.898	.878	.856	.837	.821	.806	.787	.760	.736	.711	.672
25	.973	.943	.919	.897	.876	.854	.835	.819	.803	.784	.757	.733	.709	.670
24	.973	.942	.918	.895	.874	.853	.833	.817	.801	.782	.755	.731	.707	.669
23	.972	.942	.917	.894	.873	.851	.831	.815	.799	.780	.753	.729	.705	.667
22	.972	.941	.916	.892	.871	.849	.829	.813	.797	.778	.751	.727	.703	.665
21	.971	.940	.915	.891	.869	.848	.828	.811	.795	.776	.749	.725	.701	.664
20	.971	.939	.914	.890	.868	.846	.826	.809	.793	.774	.747	.723	.698	.662
19	.970	.938	.913	.888	.866	.844	.824	.807	.791	.771	.744	.721	.696	.660
18	.970	.938	.912	.887	.864	.842	.822	.805	.789	.769	.742	.719	.694	.658
17	.969	.937	.911	.885	.863	.841	.820	.803	.787	.767	.740	.717	.692	.657
16	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
15	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
14	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
13	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
12	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
11	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
10	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
9	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
8	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
7	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
6	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655
5	.969	.936	.910	.884	.861	.839	.818	.801	.785	.765	.738	.715	.690	.655

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-17-002 (Order 86-29), § 296-17-91903, filed 8/8/86. Statutory Authority: RCW 51-.16.035. 86-06-018 (Order 86-18), § 296-17-91903, filed 2/25/86.]

WAC 296-17-91904 Table V.

RETROSPECTIVE RATING PLAN A2
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .692
Effective January 1, 1986

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.514	.504	.497	.491	.485	.481	.477	.474	.470	.467	.461	.455	.450	.441
	Minimum Premium Ratio	.994	.986	.981	.975	.969	.964	.960	.955	.951	.944	.936	.927	.918	.902
83	Basic Premium Ratio	.513	.503	.495	.488	.482	.477	.473	.469	.466	.462	.456	.450	.445	.435
	Minimum Premium Ratio	.993	.985	.979	.973	.967	.962	.957	.951	.947	.940	.931	.921	.912	.894
82	Basic Premium Ratio	.512	.501	.492	.485	.479	.474	.469	.466	.461	.458	.451	.445	.440	.429
	Minimum Premium Ratio	.993	.984	.978	.971	.964	.959	.953	.947	.943	.936	.926	.916	.906	.887
81	Basic Premium Ratio	.510	.499	.489	.483	.476	.471	.465	.461	.457	.453	.446	.440	.434	.424
	Minimum Premium Ratio	.992	.983	.976	.969	.962	.956	.950	.944	.939	.931	.921	.910	.899	.880

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
80	Basic Premium Ratio	.509	.496	.487	.479	.472	.467	.461	.457	.453	.449	.441	.435	.429	.417
	Minimum Premium Ratio	.991	.982	.975	.967	.959	.953	.947	.940	.935	.927	.916	.904	.893	.873
79	Basic Premium Ratio	.508	.495	.484	.476	.468	.463	.458	.453	.448	.444	.437	.430	.423	.411
	Minimum Premium Ratio	.990	.981	.973	.965	.957	.950	.943	.936	.930	.923	.911	.898	.887	.865
78	Basic Premium Ratio	.505	.492	.482	.474	.466	.459	.454	.449	.444	.440	.432	.425	.418	.405
	Minimum Premium Ratio	.990	.980	.972	.963	.955	.947	.940	.933	.926	.919	.906	.893	.881	.858
77	Basic Premium Ratio	.505	.491	.479	.470	.463	.457	.450	.446	.440	.436	.427	.420	.412	.399
	Minimum Premium Ratio	.989	.979	.970	.960	.952	.944	.936	.929	.922	.914	.901	.887	.875	.851
76	Basic Premium Ratio	.504	.490	.477	.468	.459	.453	.446	.441	.435	.431	.422	.413	.406	.393
	Minimum Premium Ratio	.988	.978	.969	.958	.950	.941	.933	.926	.918	.910	.896	.881	.869	.844
75	Basic Premium Ratio	.503	.486	.474	.465	.456	.449	.441	.436	.431	.426	.417	.408	.401	.386
	Minimum Premium Ratio	.988	.977	.967	.956	.947	.938	.929	.922	.914	.906	.891	.876	.865	.836
74	Basic Premium Ratio	.500	.485	.472	.461	.452	.445	.438	.432	.426	.421	.411	.403	.395	.380
	Minimum Premium Ratio	.987	.976	.966	.954	.945	.935	.926	.918	.910	.901	.886	.870	.856	.829
73	Basic Premium Ratio	.499	.482	.469	.458	.449	.441	.434	.428	.421	.417	.406	.398	.389	.374
	Minimum Premium Ratio	.986	.975	.964	.952	.942	.933	.923	.915	.906	.897	.881	.864	.850	.822
72	Basic Premium Ratio	.498	.480	.465	.455	.446	.438	.431	.423	.418	.412	.401	.392	.383	.367
	Minimum Premium Ratio	.985	.974	.963	.950	.940	.930	.919	.911	.901	.893	.875	.858	.844	.814
71	Basic Premium Ratio	.495	.477	.463	.451	.442	.433	.426	.419	.412	.407	.396	.387	.377	.360
	Minimum Premium Ratio	.985	.972	.961	.948	.937	.927	.915	.907	.896	.888	.869	.852	.837	.806
70	Basic Premium Ratio	.494	.476	.460	.448	.438	.430	.421	.414	.407	.402	.391	.380	.371	.353
	Minimum Premium Ratio	.984	.971	.959	.945	.934	.923	.911	.903	.891	.882	.863	.845	.830	.799
69	Basic Premium Ratio	.494	.472	.456	.445	.434	.425	.417	.410	.403	.396	.385	.375	.365	.347
	Minimum Premium Ratio	.983	.969	.956	.943	.931	.919	.907	.898	.886	.877	.857	.839	.823	.791
68	Basic Premium Ratio	.490	.468	.454	.441	.430	.421	.412	.404	.397	.392	.380	.368	.358	.340
	Minimum Premium Ratio	.983	.968	.954	.940	.928	.916	.903	.893	.881	.872	.851	.833	.816	.783
67	Basic Premium Ratio	.489	.467	.450	.437	.425	.416	.408	.400	.392	.386	.373	.363	.352	.334
	Minimum Premium Ratio	.982	.966	.952	.937	.924	.912	.899	.889	.876	.866	.845	.826	.809	.775
66	Basic Premium Ratio	.485	.463	.446	.433	.421	.412	.403	.395	.387	.381	.367	.357	.346	.327
	Minimum Premium Ratio	.981	.965	.950	.934	.921	.908	.895	.884	.871	.861	.840	.820	.802	.767
65	Basic Premium Ratio	.485	.461	.444	.429	.418	.407	.398	.390	.382	.375	.362	.350	.340	.321
	Minimum Premium Ratio	.980	.963	.948	.931	.918	.904	.891	.879	.866	.856	.834	.814	.795	.759
64	Basic Premium Ratio	.481	.458	.440	.426	.414	.403	.394	.385	.377	.369	.357	.344	.333	.314
	Minimum Premium Ratio	.979	.961	.946	.928	.915	.900	.887	.874	.861	.850	.828	.807	.788	.751
63	Basic Premium Ratio	.480	.454	.436	.421	.409	.398	.388	.380	.372	.364	.351	.338	.328	.307
	Minimum Premium Ratio	.979	.960	.943	.926	.912	.896	.883	.870	.856	.845	.822	.801	.781	.744
62	Basic Premium Ratio	.476	.452	.431	.418	.404	.393	.384	.375	.367	.359	.344	.331	.321	.301
	Minimum Premium Ratio	.978	.958	.941	.923	.908	.893	.879	.865	.851	.840	.816	.795	.774	.736
61	Basic Premium Ratio	.475	.448	.430	.413	.400	.388	.378	.370	.361	.353	.339	.326	.314	.294
	Minimum Premium Ratio	.977	.957	.939	.920	.905	.889	.875	.860	.846	.834	.810	.788	.767	.728
60	Basic Premium Ratio	.471	.444	.425	.409	.395	.383	.374	.363	.355	.347	.332	.319	.307	.286
	Minimum Premium Ratio	.976	.955	.937	.917	.902	.885	.871	.856	.841	.829	.804	.782	.760	.720
59	Basic Premium Ratio	.470	.443	.421	.404	.391	.379	.368	.358	.349	.341	.325	.312	.301	.279
	Minimum Premium Ratio	.975	.954	.935	.914	.899	.881	.867	.851	.836	.823	.798	.775	.753	.712
58	Basic Premium Ratio	.467	.439	.417	.400	.386	.374	.363	.352	.344	.335	.320	.306	.294	.273
	Minimum Premium Ratio	.974	.952	.933	.911	.895	.877	.863	.846	.831	.818	.793	.769	.746	.704
57	Basic Premium Ratio	.466	.435	.412	.395	.381	.368	.357	.347	.338	.330	.313	.299	.287	.266
	Minimum Premium Ratio	.973	.951	.930	.908	.892	.873	.859	.842	.826	.813	.787	.763	.739	.696
56	Basic Premium Ratio	.462	.433	.408	.391	.376	.363	.351	.342	.331	.322	.307	.293	.281	.259
	Minimum Premium Ratio	.972	.949	.928	.905	.888	.869	.855	.837	.821	.807	.781	.756	.732	.689
55	Basic Premium Ratio	.458	.429	.403	.385	.371	.358	.346	.336	.325	.316	.300	.287	.274	.253
	Minimum Premium Ratio	.972	.947	.925	.903	.885	.866	.851	.832	.816	.802	.775	.750	.725	.681
54	Basic Premium Ratio	.456	.424	.399	.381	.366	.353	.340	.329	.320	.311	.294	.280	.267	.246
	Minimum Premium Ratio	.971	.946	.923	.900	.881	.862	.847	.827	.811	.797	.769	.744	.718	.676

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
53	Basic Premium Ratio	.452	.419	.394	.376	.359	.346	.335	.323	.312	.303	.287	.274	.261	.240
	Minimum Premium Ratio	.969	.944	.920	.897	.878	.858	.843	.823	.807	.792	.764	.739	.713	.671
52	Basic Premium Ratio	.447	.415	.389	.370	.354	.340	.328	.318	.307	.298	.281	.266	.255	.234
	Minimum Premium Ratio	.968	.942	.918	.894	.874	.855	.839	.818	.803	.787	.759	.734	.708	.666
51	Basic Premium Ratio	.443	.410	.384	.365	.349	.335	.322	.310	.301	.292	.275	.260	.248	.227
	Minimum Premium Ratio	.966	.940	.915	.891	.871	.851	.834	.814	.798	.783	.755	.729	.704	.662
50	Basic Premium Ratio	.439	.405	.379	.360	.343	.329	.316	.304	.293	.285	.268	.254	.241	.221
	Minimum Premium Ratio	.965	.938	.913	.888	.867	.847	.830	.810	.794	.778	.750	.724	.699	.657
49	Basic Premium Ratio	.437	.401	.374	.355	.338	.322	.309	.298	.287	.278	.261	.247	.235	.215
	Minimum Premium Ratio	.964	.935	.910	.885	.863	.844	.826	.805	.790	.774	.745	.719	.694	.652
48	Basic Premium Ratio	.433	.396	.369	.348	.330	.316	.303	.291	.281	.271	.255	.241	.229	.208
	Minimum Premium Ratio	.962	.933	.908	.883	.860	.840	.822	.801	.786	.770	.741	.714	.689	.647
47	Basic Premium Ratio	.428	.391	.364	.342	.324	.310	.297	.285	.274	.265	.248	.235	.221	.202
	Minimum Premium Ratio	.961	.931	.905	.880	.856	.837	.818	.797	.781	.765	.736	.710	.684	.642
46	Basic Premium Ratio	.424	.386	.358	.336	.319	.303	.289	.277	.267	.258	.242	.228	.216	.197
	Minimum Premium Ratio	.959	.929	.903	.877	.853	.833	.814	.793	.777	.761	.732	.705	.680	.637
45	Basic Premium Ratio	.419	.381	.350	.329	.311	.296	.283	.271	.260	.251	.235	.222	.211	.192
	Minimum Premium Ratio	.958	.927	.900	.874	.849	.829	.810	.789	.773	.756	.727	.700	.675	.632
44	Basic Premium Ratio	.414	.373	.345	.323	.304	.288	.276	.265	.254	.245	.229	.216	.205	.186
	Minimum Premium Ratio	.957	.925	.898	.871	.846	.826	.806	.785	.768	.752	.723	.695	.670	.627
43	Basic Premium Ratio	.409	.367	.337	.315	.297	.282	.269	.257	.248	.239	.223	.210	.200	.182
	Minimum Premium Ratio	.955	.923	.896	.868	.842	.822	.802	.780	.764	.748	.718	.690	.665	.622
42	Basic Premium Ratio	.405	.362	.331	.309	.291	.275	.262	.251	.240	.232	.216	.203	.193	.175
	Minimum Premium Ratio	.954	.921	.893	.865	.839	.819	.798	.776	.760	.743	.714	.685	.661	.617
41	Basic Premium Ratio	.400	.357	.326	.303	.283	.269	.256	.244	.234	.225	.210	.197	.186	.169
	Minimum Premium Ratio	.952	.919	.891	.863	.835	.815	.794	.772	.756	.739	.709	.680	.656	.612
40	Basic Premium Ratio	.395	.349	.321	.295	.277	.263	.249	.238	.227	.219	.203	.190	.179	.163
	Minimum Premium Ratio	.951	.916	.888	.860	.832	.812	.790	.768	.751	.734	.705	.676	.651	.607
39	Basic Premium Ratio	.390	.344	.312	.290	.271	.255	.242	.230	.221	.212	.196	.184	.174	.157
	Minimum Premium Ratio	.950	.914	.886	.857	.828	.808	.786	.764	.747	.730	.700	.671	.646	.603
38	Basic Premium Ratio	.385	.339	.307	.282	.263	.249	.236	.223	.214	.204	.190	.178	.167	.151
	Minimum Premium Ratio	.948	.912	.883	.854	.825	.804	.782	.760	.743	.726	.695	.666	.641	.598
37	Basic Premium Ratio	.376	.330	.298	.276	.257	.241	.228	.216	.207	.198	.183	.171	.161	.146
	Minimum Premium Ratio	.947	.910	.881	.851	.821	.801	.778	.755	.738	.721	.691	.661	.637	.593
36	Basic Premium Ratio	.371	.324	.293	.267	.249	.235	.221	.210	.201	.192	.177	.166	.155	.140
	Minimum Premium Ratio	.945	.908	.879	.848	.819	.797	.775	.751	.736	.717	.686	.658	.632	.588
35	Basic Premium Ratio	.362	.315	.284	.261	.240	.226	.214	.203	.193	.184	.171	.159	.150	.135
	Minimum Premium Ratio	.945	.906	.878	.847	.818	.796	.774	.750	.735	.716	.685	.658	.631	.587
34	Basic Premium Ratio	.353	.306	.275	.252	.234	.220	.207	.196	.187	.179	.164	.154	.144	.130
	Minimum Premium Ratio	.944	.904	.876	.846	.817	.795	.773	.749	.734	.715	.684	.657	.631	.588
33	Basic Premium Ratio	.347	.297	.268	.243	.226	.212	.199	.189	.179	.171	.158	.148	.139	.125
	Minimum Premium Ratio	.944	.904	.875	.844	.816	.794	.772	.748	.733	.715	.684	.657	.631	.588
32	Basic Premium Ratio	.338	.288	.259	.237	.219	.204	.193	.182	.173	.166	.153	.142	.134	.121
	Minimum Premium Ratio	.943	.903	.874	.843	.815	.793	.771	.747	.732	.714	.684	.657	.632	.589
31	Basic Premium Ratio	.329	.282	.251	.229	.211	.197	.185	.176	.167	.160	.148	.137	.130	.117
	Minimum Premium Ratio	.943	.903	.873	.842	.814	.792	.769	.746	.731	.714	.683	.656	.632	.590
30	Basic Premium Ratio	.319	.273	.242	.220	.205	.191	.179	.169	.160	.154	.141	.132	.125	.113
	Minimum Premium Ratio	.942	.902	.872	.840	.813	.791	.768	.745	.730	.713	.683	.656	.632	.591
29	Basic Premium Ratio	.310	.264	.235	.213	.196	.183	.172	.163	.155	.148	.136	.128	.121	.110
	Minimum Premium Ratio	.942	.902	.870	.839	.812	.790	.767	.744	.729	.713	.683	.656	.632	.591
28	Basic Premium Ratio	.301	.255	.227	.205	.188	.177	.166	.157	.148	.141	.130	.122	.115	.103
	Minimum Premium Ratio	.941	.901	.869	.838	.811	.789	.766	.743	.728	.712	.682	.655	.632	.592
27	Basic Premium Ratio	.295	.248	.218	.199	.182	.169	.157	.148	.141	.134	.123	.114	.106	.095
	Minimum Premium Ratio	.941	.900	.868	.837	.810	.788	.765	.742	.727	.712	.682	.665	.632	.593

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
26	Basic Premium Ratio	.286	.240	.212	.191	.174	.161	.151	.140	.134	.127	.115	.107	.099	.088
	Minimum Premium Ratio	.940	.900	.867	.835	.809	.787	.764	.741	.726	.712	.682	.655	.632	.593
25	Basic Premium Ratio	.276	.230	.203	.182	.167	.154	.143	.134	.126	.119	.109	.100	.093	.083
	Minimum Premium Ratio	.940	.899	.866	.834	.808	.786	.763	.740	.725	.711	.682	.654	.632	.594
24	Basic Premium Ratio	.266	.221	.194	.175	.159	.147	.137	.129	.121	.114	.105	.097	.090	.080
	Minimum Premium Ratio	.939	.899	.865	.833	.807	.785	.762	.739	.724	.711	.681	.654	.632	.595
23	Basic Premium Ratio	.253	.212	.185	.166	.153	.141	.131	.123	.116	.110	.101	.093	.087	.078
	Minimum Premium Ratio	.939	.898	.863	.831	.806	.784	.761	.738	.723	.710	.681	.654	.633	.596
22	Basic Premium Ratio	.244	.202	.176	.158	.145	.134	.124	.118	.112	.106	.097	.090	.084	.076
	Minimum Premium Ratio	.939	.898	.862	.830	.805	.783	.760	.737	.722	.710	.681	.653	.633	.596
21	Basic Premium Ratio	.230	.193	.169	.152	.139	.128	.119	.112	.107	.102	.093	.087	.082	.075
	Minimum Premium Ratio	.935	.897	.861	.829	.804	.782	.759	.736	.721	.709	.680	.653	.633	.597
20	Basic Premium Ratio	.220	.183	.160	.143	.131	.121	.113	.107	.102	.097	.089	.083	.079	.072
	Minimum Premium Ratio	.930	.896	.860	.828	.803	.781	.758	.735	.720	.709	.680	.653	.633	.598
19	Basic Premium Ratio	.215	.177	.152	.137	.124	.115	.107	.101	.096	.092	.084	.079	.075	.068
	Minimum Premium Ratio	.924	.891	.859	.826	.802	.780	.757	.734	.719	.708	.680	.652	.633	.599
18	Basic Premium Ratio	.205	.168	.145	.129	.117	.108	.100	.095	.090	.086	.079	.075	.071	.066
	Minimum Premium Ratio	.919	.887	.858	.825	.801	.779	.756	.733	.718	.708	.679	.652	.633	.599
17	Basic Premium Ratio	.196	.159	.137	.121	.111	.102	.095	.090	.085	.081	.075	.071	.068	.063
	Minimum Premium Ratio	.913	.882	.853	.824	.800	.778	.755	.732	.717	.708	.679	.652	.633	.599
16	Basic Premium Ratio	.186	.150	.128	.114	.103	.095	.090	.085	.080	.077	.072	.068	.065	.061
	Minimum Premium Ratio	.908	.877	.849	.822	.799	.777	.754	.731	.716	.707	.679	.651	.633	.599
15	Basic Premium Ratio	.176	.141	.121	.108	.098	.090	.085	.080	.077	.074	.069	.066	.063	.059
	Minimum Premium Ratio	.902	.872	.845	.820	.798	.776	.753	.730	.715	.707	.678	.651	.633	.599
14	Basic Premium Ratio	.172	.135	.113	.103	.093	.088	.082	.078	.075	.072	.068	.065	.062	.059
	Minimum Premium Ratio	.897	.868	.841	.817	.795	.774	.752	.729	.714	.706	.678	.651	.634	.598
13	Basic Premium Ratio	.164	.126	.108	.097	.091	.084	.080	.076	.073	.070	.067	.064	.062	.058
	Minimum Premium Ratio	.892	.863	.837	.813	.791	.771	.751	.728	.713	.706	.678	.650	.634	.598
12	Basic Premium Ratio	.158	.117	.102	.094	.087	.082	.077	.074	.071	.069	.066	.063	.061	.058
	Minimum Premium Ratio	.886	.858	.833	.810	.788	.769	.749	.727	.712	.705	.677	.650	.633	.597
11	Basic Premium Ratio	.149	.107	.095	.089	.083	.079	.075	.072	.069	.068	.064	.062	.060	.057
	Minimum Premium Ratio	.881	.853	.829	.806	.785	.766	.748	.726	.711	.705	.676	.650	.632	.597
10	Basic Premium Ratio	.144	.100	.091	.085	.080	.075	.073	.070	.068	.066	.063	.061	.059	.057
	Minimum Premium Ratio	.875	.849	.825	.802	.782	.763	.746	.725	.710	.704	.675	.650	.632	.597
9	Basic Premium Ratio	.134	.093	.086	.081	.077	.073	.070	.068	.066	.065	.062	.060	.059	.057
	Minimum Premium Ratio	.870	.844	.820	.799	.779	.761	.744	.724	.709	.704	.674	.649	.631	.596
8	Basic Premium Ratio	.121	.087	.082	.077	.074	.070	.068	.066	.065	.063	.061	.059	.058	.056
	Minimum Premium Ratio	.864	.839	.816	.795	.776	.758	.741	.723	.708	.704	.673	.649	.630	.596
7	Basic Premium Ratio	.106	.082	.077	.074	.070	.068	.066	.064	.063	.062	.060	.058	.057	.056
	Minimum Premium Ratio	.859	.834	.812	.792	.773	.755	.739	.722	.707	.703	.671	.649	.630	.596
6	Basic Premium Ratio	.092	.077	.074	.070	.068	.066	.064	.063	.061	.060	.058	.057	.057	.055
	Minimum Premium Ratio	.853	.830	.808	.788	.770	.753	.737	.721	.706	.695	.670	.648	.629	.595
5	Basic Premium Ratio	.092	.073	.070	.067	.065	.064	.062	.061	.060	.059	.057	.057	.056	.055
	Minimum Premium Ratio	.848	.825	.804	.785	.767	.750	.734	.720	.705	.693	.669	.648	.629	.595

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-17-002 (Order 86-29), § 296-17-91904, filed 8/8/86. Statutory Authority: RCW 51-.16.035. 86-06-018 (Order 86-18), § 296-17-91904, filed 2/25/86.]

WAC 296-17-91905 Table VI.

RETROSPECTIVE RATING PLAN A3
MINIMUM PREMIUM RATIOS
AND BASIC PREMIUM RATIOS
LOSS CONVERSION FACTOR = .692
Effective January 1, 1986

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
84	Basic Premium Ratio	.820	.813	.793	.783	.777	.766	.759	.732	.736	.727	.722	.706	.694	.673
	Minimum Premium Ratio	.986	.973	.964	.956	.948	.942	.935	.931	.924	.919	.909	.900	.891	.874
83	Basic Premium Ratio	.820	.812	.790	.780	.772	.760	.753	.728	.730	.721	.715	.698	.685	.663
	Minimum Premium Ratio	.985	.972	.962	.953	.944	.937	.931	.925	.919	.913	.903	.892	.883	.865
82	Basic Premium Ratio	.820	.810	.788	.776	.767	.755	.747	.724	.724	.715	.707	.690	.677	.653
	Minimum Premium Ratio	.984	.970	.958	.949	.940	.932	.925	.920	.913	.907	.896	.885	.876	.857
81	Basic Premium Ratio	.820	.808	.786	.772	.763	.750	.742	.720	.718	.709	.699	.683	.668	.643
	Minimum Premium Ratio	.981	.967	.954	.946	.936	.928	.920	.913	.907	.901	.889	.878	.868	.849
80	Basic Premium Ratio	.820	.806	.783	.768	.758	.745	.736	.716	.712	.703	.692	.675	.659	.633
	Minimum Premium Ratio	.981	.964	.951	.941	.931	.923	.915	.909	.901	.895	.882	.871	.860	.839
79	Basic Premium Ratio	.820	.804	.781	.765	.753	.739	.730	.712	.706	.697	.684	.667	.651	.622
	Minimum Premium Ratio	.979	.962	.948	.938	.927	.918	.910	.903	.895	.888	.876	.864	.852	.831
78	Basic Premium Ratio	.820	.803	.779	.761	.749	.734	.725	.708	.700	.691	.677	.659	.642	.612
	Minimum Premium Ratio	.976	.959	.945	.934	.924	.913	.905	.897	.890	.882	.869	.856	.844	.821
77	Basic Premium Ratio	.820	.801	.776	.757	.744	.729	.719	.704	.694	.684	.669	.651	.633	.602
	Minimum Premium Ratio	.975	.957	.942	.930	.919	.910	.900	.893	.884	.876	.862	.849	.836	.813
76	Basic Premium Ratio	.820	.799	.774	.754	.740	.724	.713	.700	.688	.678	.661	.644	.625	.592
	Minimum Premium Ratio	.974	.956	.940	.927	.915	.905	.895	.886	.878	.870	.855	.840	.828	.804
75	Basic Premium Ratio	.820	.797	.772	.750	.735	.718	.707	.696	.682	.672	.654	.636	.616	.582
	Minimum Premium Ratio	.974	.952	.936	.923	.911	.899	.889	.881	.872	.863	.848	.833	.820	.794
74	Basic Premium Ratio	.820	.795	.769	.746	.730	.713	.702	.692	.676	.666	.646	.628	.607	.572
	Minimum Premium Ratio	.970	.950	.934	.918	.906	.894	.884	.875	.866	.857	.840	.825	.811	.786
73	Basic Premium Ratio	.820	.794	.767	.743	.726	.708	.696	.688	.670	.660	.638	.620	.599	.562
	Minimum Premium Ratio	.969	.946	.929	.915	.902	.889	.879	.869	.859	.851	.833	.818	.803	.776
72	Basic Premium Ratio	.820	.792	.765	.739	.721	.703	.690	.684	.664	.654	.631	.613	.590	.552
	Minimum Premium Ratio	.968	.944	.925	.912	.898	.886	.874	.863	.854	.844	.826	.810	.795	.767
71	Basic Premium Ratio	.820	.790	.759	.734	.715	.697	.682	.674	.655	.645	.620	.602	.578	.540
	Minimum Premium Ratio	.965	.941	.923	.907	.893	.880	.868	.857	.847	.837	.819	.802	.786	.757
70	Basic Premium Ratio	.820	.788	.752	.729	.709	.690	.674	.665	.647	.636	.609	.591	.567	.529
	Minimum Premium Ratio	.964	.939	.919	.903	.889	.875	.862	.852	.841	.831	.812	.793	.778	.747
69	Basic Premium Ratio	.820	.785	.746	.723	.703	.684	.666	.655	.638	.626	.598	.579	.555	.517
	Minimum Premium Ratio	.963	.935	.914	.899	.883	.869	.857	.846	.835	.823	.804	.786	.770	.738
68	Basic Premium Ratio	.820	.783	.739	.718	.697	.677	.658	.645	.629	.617	.587	.568	.543	.505
	Minimum Premium Ratio	.959	.931	.912	.894	.878	.864	.851	.839	.828	.817	.797	.777	.760	.729
67	Basic Premium Ratio	.820	.779	.736	.712	.690	.670	.651	.636	.621	.608	.577	.558	.533	.495
	Minimum Premium Ratio	.957	.929	.907	.889	.873	.858	.845	.833	.821	.810	.789	.770	.752	.719
66	Basic Premium Ratio	.820	.776	.732	.707	.682	.663	.643	.628	.613	.599	.568	.548	.523	.485
	Minimum Premium Ratio	.954	.925	.903	.885	.868	.853	.839	.826	.814	.803	.781	.761	.744	.709
65	Basic Premium Ratio	.820	.772	.729	.701	.675	.655	.636	.619	.604	.590	.558	.537	.513	.475
	Minimum Premium Ratio	.953	.923	.900	.880	.864	.847	.833	.821	.808	.796	.773	.753	.735	.701
64	Basic Premium Ratio	.820	.768	.725	.695	.667	.648	.628	.610	.596	.581	.548	.527	.503	.465
	Minimum Premium Ratio	.949	.919	.895	.877	.859	.841	.827	.814	.801	.788	.766	.744	.726	.691
63	Basic Premium Ratio	.820	.764	.719	.690	.661	.641	.620	.601	.586	.571	.538	.517	.492	.454
	Minimum Premium Ratio	.948	.914	.891	.871	.853	.835	.820	.807	.794	.781	.758	.736	.718	.682
62	Basic Premium Ratio	.820	.759	.714	.684	.656	.634	.612	.592	.576	.562	.529	.507	.482	.444
	Minimum Premium Ratio	.944	.912	.886	.867	.848	.830	.815	.801	.788	.774	.750	.727	.708	.672
61	Basic Premium Ratio	.820	.755	.708	.679	.650	.627	.603	.582	.566	.552	.519	.496	.471	.433
	Minimum Premium Ratio	.943	.908	.884	.861	.843	.824	.808	.794	.781	.767	.743	.719	.699	.662

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
60	Basic Premium Ratio	.820	.750	.702	.673	.644	.620	.595	.573	.556	.542	.509	.486	.460	.422
	Minimum Premium Ratio	.939	.904	.879	.856	.837	.818	.802	.787	.773	.758	.734	.710	.690	.652
59	Basic Premium Ratio	.813	.743	.696	.664	.635	.611	.586	.564	.546	.532	.499	.475	.449	.411
	Minimum Premium Ratio	.937	.902	.874	.851	.832	.812	.795	.780	.766	.751	.725	.701	.681	.642
58	Basic Premium Ratio	.806	.737	.690	.655	.626	.602	.577	.555	.537	.522	.489	.464	.439	.401
	Minimum Premium Ratio	.934	.898	.869	.846	.825	.806	.789	.773	.759	.743	.718	.693	.672	.633
57	Basic Premium Ratio	.798	.730	.684	.645	.617	.593	.568	.545	.527	.511	.479	.452	.428	.390
	Minimum Premium Ratio	.932	.893	.864	.840	.820	.799	.781	.766	.752	.736	.709	.684	.663	.624
56	Basic Premium Ratio	.791	.723	.678	.636	.608	.584	.559	.536	.517	.501	.469	.441	.417	.379
	Minimum Premium Ratio	.928	.890	.859	.835	.814	.793	.775	.759	.743	.727	.701	.676	.654	.614
55	Basic Premium Ratio	.788	.717	.672	.629	.600	.575	.550	.526	.507	.491	.459	.432	.408	.370
	Minimum Premium Ratio	.924	.886	.854	.829	.808	.787	.768	.753	.736	.720	.692	.667	.645	.606
54	Basic Premium Ratio	.785	.710	.665	.623	.592	.566	.541	.517	.498	.481	.449	.423	.398	.361
	Minimum Premium Ratio	.922	.881	.849	.824	.802	.781	.761	.744	.729	.713	.685	.659	.637	.597
53	Basic Premium Ratio	.782	.704	.659	.616	.584	.556	.532	.507	.488	.470	.439	.413	.389	.352
	Minimum Premium Ratio	.918	.876	.844	.818	.794	.772	.755	.737	.720	.704	.677	.651	.629	.589
52	Basic Premium Ratio	.779	.697	.652	.609	.576	.547	.523	.497	.478	.460	.429	.404	.379	.343
	Minimum Premium Ratio	.913	.871	.838	.812	.789	.766	.747	.731	.713	.697	.669	.642	.621	.581
51	Basic Premium Ratio	.774	.691	.644	.600	.566	.537	.513	.487	.467	.450	.419	.394	.369	.333
	Minimum Premium Ratio	.908	.865	.833	.806	.782	.759	.740	.722	.706	.690	.662	.635	.613	.572
50	Basic Premium Ratio	.769	.685	.636	.591	.556	.527	.502	.477	.457	.440	.408	.383	.359	.323
	Minimum Premium Ratio	.904	.861	.827	.800	.775	.753	.733	.715	.697	.681	.653	.627	.604	.564
49	Basic Premium Ratio	.763	.678	.627	.582	.546	.517	.492	.466	.446	.429	.398	.373	.349	.312
	Minimum Premium Ratio	.902	.856	.821	.795	.769	.744	.724	.708	.690	.673	.645	.619	.596	.556
48	Basic Premium Ratio	.758	.672	.619	.573	.536	.507	.481	.456	.435	.419	.387	.362	.339	.302
	Minimum Premium Ratio	.898	.850	.815	.786	.761	.737	.717	.699	.683	.665	.637	.611	.588	.548
47	Basic Premium Ratio	.749	.663	.607	.562	.525	.496	.470	.445	.424	.408	.377	.353	.330	.295
	Minimum Premium Ratio	.892	.845	.810	.780	.754	.731	.710	.692	.674	.657	.629	.603	.579	.540
46	Basic Premium Ratio	.740	.654	.595	.550	.513	.485	.459	.434	.414	.398	.367	.343	.321	.287
	Minimum Premium Ratio	.888	.839	.804	.773	.748	.723	.702	.683	.666	.650	.621	.595	.572	.533
45	Basic Premium Ratio	.731	.645	.583	.539	.502	.474	.448	.422	.403	.387	.357	.334	.312	.280
	Minimum Premium Ratio	.884	.834	.795	.765	.739	.715	.695	.676	.657	.641	.612	.587	.565	.526
44	Basic Premium Ratio	.722	.636	.571	.527	.490	.463	.437	.411	.392	.376	.347	.324	.303	.272
	Minimum Premium Ratio	.878	.826	.790	.758	.732	.706	.686	.669	.650	.633	.605	.580	.558	.519
43	Basic Premium Ratio	.714	.626	.561	.517	.479	.451	.426	.401	.382	.365	.337	.314	.293	.263
	Minimum Premium Ratio	.873	.820	.781	.750	.723	.699	.679	.659	.643	.627	.598	.572	.551	.513
42	Basic Premium Ratio	.705	.615	.551	.507	.467	.440	.414	.390	.371	.355	.327	.304	.284	.253
	Minimum Premium Ratio	.869	.814	.775	.743	.717	.691	.670	.652	.634	.618	.589	.564	.543	.504
41	Basic Premium Ratio	.697	.605	.540	.496	.456	.428	.403	.380	.361	.344	.316	.294	.274	.244
	Minimum Premium Ratio	.863	.809	.769	.737	.708	.684	.663	.644	.627	.610	.582	.557	.534	.496
40	Basic Premium Ratio	.688	.594	.530	.486	.444	.416	.391	.369	.350	.333	.306	.284	.264	.234
	Minimum Premium Ratio	.858	.800	.763	.728	.702	.677	.656	.636	.618	.603	.574	.548	.526	.489
39	Basic Premium Ratio	.677	.583	.519	.475	.434	.406	.380	.359	.340	.323	.296	.274	.255	.226
	Minimum Premium Ratio	.853	.795	.754	.722	.695	.668	.647	.628	.611	.594	.565	.541	.519	.481
38	Basic Premium Ratio	.666	.573	.508	.464	.424	.395	.370	.348	.329	.313	.286	.264	.246	.218
	Minimum Premium Ratio	.848	.790	.748	.713	.686	.661	.640	.620	.604	.585	.558	.533	.511	.473
37	Basic Premium Ratio	.654	.562	.497	.453	.413	.385	.359	.338	.319	.302	.276	.254	.237	.209
	Minimum Premium Ratio	.839	.781	.739	.707	.679	.652	.631	.611	.595	.577	.549	.525	.503	.466
36	Basic Premium Ratio	.643	.551	.486	.442	.403	.374	.348	.327	.308	.292	.266	.244	.228	.201
	Minimum Premium Ratio	.834	.774	.733	.697	.670	.645	.623	.604	.588	.570	.541	.518	.495	.458
35	Basic Premium Ratio	.631	.538	.473	.429	.392	.363	.338	.317	.299	.283	.257	.236	.220	.194
	Minimum Premium Ratio	.825	.765	.723	.690	.660	.636	.615	.596	.579	.561	.534	.510	.489	.452
34	Basic Premium Ratio	.618	.525	.461	.417	.380	.352	.328	.307	.289	.274	.249	.228	.212	.187
	Minimum Premium Ratio	.815	.755	.713	.681	.654	.629	.607	.588	.572	.555	.527	.504	.482	.447

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
33	Basic Premium Ratio	.606	.511	.448	.404	.369	.341	.317	.297	.280	.264	.240	.220	.203	.179
	Minimum Premium Ratio	.810	.746	.706	.671	.644	.620	.598	.580	.563	.546	.520	.497	.476	.441
32	Basic Premium Ratio	.593	.498	.435	.391	.357	.330	.307	.287	.270	.255	.231	.212	.195	.172
	Minimum Premium Ratio	.800	.736	.697	.664	.637	.611	.591	.572	.556	.539	.513	.490	.470	.436
31	Basic Premium Ratio	.578	.484	.422	.379	.345	.319	.296	.277	.260	.246	.222	.204	.188	.166
	Minimum Premium Ratio	.791	.730	.688	.655	.628	.604	.583	.565	.549	.532	.507	.484	.465	.431
30	Basic Premium Ratio	.563	.470	.409	.367	.333	.308	.285	.266	.251	.237	.214	.196	.181	.159
	Minimum Premium Ratio	.781	.720	.678	.646	.621	.597	.576	.557	.541	.525	.499	.478	.458	.427
29	Basic Premium Ratio	.548	.455	.396	.354	.321	.296	.274	.256	.241	.227	.205	.187	.174	.153
	Minimum Premium Ratio	.772	.711	.671	.638	.611	.588	.567	.550	.535	.518	.493	.473	.453	.422
28	Basic Premium Ratio	.533	.441	.383	.342	.309	.285	.263	.245	.231	.218	.196	.179	.167	.146
	Minimum Premium Ratio	.762	.702	.662	.629	.603	.580	.560	.543	.527	.511	.486	.466	.446	.415
27	Basic Premium Ratio	.519	.427	.369	.329	.297	.273	.251	.233	.219	.206	.185	.168	.156	.136
	Minimum Premium Ratio	.756	.695	.653	.622	.595	.572	.551	.533	.519	.503	.478	.457	.437	.406
26	Basic Premium Ratio	.504	.413	.355	.315	.284	.260	.239	.222	.208	.195	.174	.158	.145	.124
	Minimum Premium Ratio	.747	.686	.646	.614	.587	.563	.543	.525	.511	.494	.469	.449	.428	.398
25	Basic Premium Ratio	.490	.398	.341	.302	.272	.248	.227	.210	.196	.183	.162	.147	.133	.113
	Minimum Premium Ratio	.736	.676	.636	.604	.579	.555	.534	.517	.502	.485	.461	.440	.421	.392
24	Basic Premium Ratio	.475	.384	.327	.288	.259	.235	.215	.198	.184	.171	.151	.136	.123	.104
	Minimum Premium Ratio	.727	.666	.627	.597	.570	.547	.528	.511	.495	.479	.456	.436	.418	.389
23	Basic Premium Ratio	.454	.367	.312	.275	.247	.224	.205	.189	.176	.164	.145	.130	.119	.101
	Minimum Premium Ratio	.713	.657	.617	.587	.563	.540	.521	.505	.489	.474	.451	.432	.414	.386
22	Basic Premium Ratio	.434	.349	.298	.262	.235	.213	.195	.180	.167	.156	.138	.125	.114	.097
	Minimum Premium Ratio	.704	.647	.608	.578	.554	.533	.513	.499	.484	.469	.446	.427	.410	.383
21	Basic Premium Ratio	.408	.332	.283	.248	.222	.201	.184	.171	.159	.149	.132	.119	.110	.094
	Minimum Premium Ratio	.690	.637	.600	.571	.547	.526	.507	.491	.478	.464	.442	.424	.407	.381
20	Basic Premium Ratio	.388	.314	.268	.234	.209	.190	.174	.161	.150	.141	.125	.113	.105	.090
	Minimum Premium Ratio	.680	.627	.591	.562	.539	.518	.500	.485	.472	.458	.436	.419	.402	.377
19	Basic Premium Ratio	.374	.298	.251	.220	.196	.177	.162	.149	.139	.131	.116	.105	.097	.084
	Minimum Premium Ratio	.674	.620	.582	.555	.531	.511	.493	.478	.465	.451	.430	.413	.397	.372
18	Basic Premium Ratio	.355	.281	.237	.205	.181	.163	.148	.137	.127	.119	.106	.098	.090	.079
	Minimum Premium Ratio	.664	.611	.575	.546	.523	.503	.485	.471	.458	.444	.424	.409	.392	.369
17	Basic Premium Ratio	.337	.265	.221	.189	.169	.151	.137	.127	.117	.110	.098	.090	.083	.074
	Minimum Premium Ratio	.654	.601	.566	.537	.516	.497	.479	.465	.452	.439	.419	.404	.388	.366
16	Basic Premium Ratio	.318	.247	.204	.176	.154	.137	.127	.117	.108	.102	.091	.083	.078	.069
	Minimum Premium Ratio	.644	.592	.557	.530	.508	.488	.473	.459	.447	.434	.415	.399	.384	.362
15	Basic Premium Ratio	.300	.229	.190	.164	.143	.128	.117	.108	.101	.095	.086	.079	.074	.066
	Minimum Premium Ratio	.635	.583	.550	.524	.502	.484	.468	.455	.443	.430	.412	.397	.382	.361
14	Basic Premium Ratio	.291	.216	.174	.154	.134	.123	.112	.103	.097	.091	.083	.078	.072	.065
	Minimum Premium Ratio	.630	.577	.542	.519	.498	.481	.465	.452	.441	.428	.411	.397	.381	.360
13	Basic Premium Ratio	.275	.199	.163	.142	.129	.116	.107	.099	.094	.088	.081	.076	.071	.064
	Minimum Premium Ratio	.622	.568	.537	.513	.495	.478	.463	.450	.440	.427	.410	.396	.381	.360
12	Basic Premium Ratio	.263	.182	.151	.134	.121	.110	.102	.096	.089	.086	.078	.073	.069	.063
	Minimum Premium Ratio	.616	.559	.531	.510	.491	.475	.460	.449	.437	.426	.409	.394	.380	.359
11	Basic Premium Ratio	.246	.162	.138	.126	.114	.105	.098	.092	.086	.083	.076	.071	.068	.062
	Minimum Premium Ratio	.608	.549	.524	.505	.488	.472	.458	.447	.436	.424	.407	.393	.379	.359
10	Basic Premium Ratio	.229	.147	.129	.117	.107	.098	.093	.088	.083	.079	.074	.069	.066	.061
	Minimum Premium Ratio	.602	.542	.520	.501	.484	.469	.456	.445	.434	.422	.406	.392	.378	.358
9	Basic Premium Ratio	.211	.133	.119	.109	.101	.094	.088	.083	.079	.077	.071	.068	.065	.061
	Minimum Premium Ratio	.593	.535	.515	.497	.481	.467	.453	.442	.432	.421	.405	.392	.378	.358
8	Basic Premium Ratio	.189	.122	.111	.102	.095	.088	.083	.079	.077	.074	.069	.066	.063	.060
	Minimum Premium Ratio	.579	.529	.511	.493	.478	.464	.451	.440	.431	.420	.404	.391	.377	.358
7	Basic Premium Ratio	.160	.112	.101	.095	.088	.083	.079	.076	.074	.071	.067	.063	.062	.059
	Minimum Premium Ratio	.565	.524	.506	.490	.475	.462	.449	.439	.430	.418	.403	.389	.376	.357

Maximum Premium Ratio:		1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.60	1.70	1.80	2.00
Size Group															
6	Basic Premium Ratio	.130	.101	.095	.088	.083	.079	.075	.072	.070	.068	.064	.062	.060	.058
	Minimum Premium Ratio	.550	.519	.503	.486	.472	.459	.447	.437	.428	.417	.401	.389	.376	.357
5	Basic Premium Ratio	.099	.092	.087	.081	.078	.074	.071	.069	.067	.065	.062	.060	.059	.057
	Minimum Premium Ratio	.550	.515	.499	.483	.470	.457	.445	.435	.426	.415	.400	.388	.375	.356

[Statutory Authority: RCW 51.04.020(1) and 51.16.035. 86-17-002 (Order 86-29), § 296-17-91905, filed 8/8/86. Statutory Authority: RCW 51-.16.035. 86-06-018 (Order 86-18), § 296-17-91905, filed 2/25/86.]

WAC 296-17-920 Assessment for supplemental pension fund. The amount of 20.9 mills ($.0209) shall be retained by each employer from the earnings of each worker for each hour or fraction thereof the worker is employed. Provided that in classifications 6707 and 7102, the employer shall retain sixteen cents per day from each worker and in classification 6708 the employer shall retain 2.1 mills ($.0021) per hour to be reported for premium calculation under WAC 296-17-350(8) from each worker. The amount of money so retained from the employee shall be matched in an equal amount by each employer, except as otherwise provided in these rules, all such moneys shall be remitted to the department on or before the last day of January, April, July and October of each year for the preceding calendar quarter, provided self-insured employers shall remit to the department as provided under WAC 296-15-060. All such moneys shall be deposited in the supplemental pension fund.

[Statutory Authority: RCW 51.16.035. 86-12-041 (Order 86-18), § 296-17-920, filed 5/30/86, effective 7/1/86; 83-24-017 (Order 83-36), § 296-17-920, filed 11/30/83, effective 1/1/84; 82-24-047 (Order 82-38), § 296-17-920, filed 11/29/82, effective 1/1/83; 81-24-042 (Order 81-30), § 296-17-920, filed 11/30/81, effective 1/1/82; 80-17-016 (Order 80-23), § 296-17-920, filed 11/13/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-17-920, filed 11/30/79, effective 1/1/80. Statutory Authority: RCW 51.04.020(1) and 51.16.035. 78-12-043 (Order 78-23), § 296-17-920, filed 11/27/78, effective 1/1/79; Order 77-27, § 296-17-920, filed 11/30/77, effective 1/1/78; Order 77-10, § 296-17-920, filed 5/31/77; Order 76-36, § 296-17-920, filed 11/30/76; Order 75-38, § 296-17-920, filed 11/24/75, effective 1/1/76; Order 75-28, § 296-17-920, filed 8/29/75, effective 10/1/75; Order 74-40, § 296-17-920, filed 11/27/74, effective 1/1/75; Order 74-6, § 296-17-920, filed 1/23/74.]

WAC 296-17-930 Volunteers. Any city, county, school district, municipal corporation or any other political subdivision, or private nonprofit charitable organization electing to insure volunteers under the authority of RCW 51.12.035 as now or hereafter amended shall give notice in writing on a form prescribed by the department. Any employer having elected to insure volunteers shall maintain office records of all hours of work performed by volunteers. Such office records shall include notice in writing as a registration of each person who has volunteered and has been accepted by the employer to perform work as a volunteer. A report of such hours will be included with the employer's regular quarterly report of payroll as prescribed by the department, and will include payment for the premium based on such hours and at such rates per hour as assigned by the department.

[Order 77-27, § 296-17-930, filed 11/30/77, effective 1/1/78; Order 75-28, § 296-17-930, filed 8/29/75, effective 10/1/75.]

Chapter 296-18A WAC
REHABILITATION REVIEW

WAC

296-18A-420 Definitions.
296-18A-440 Reports.
296-18A-445 Self-insured reports.
296-18A-450 Vocational rehabilitation plan.
296-18A-460 Performance criteria.
296-18A-470 Disputes.
296-18A-480 Responsibilities.
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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-18A-010 General information. [Statutory Authority: RCW 51-.41.030. 82-24-055 (Order 82-40), § 296-18-010 (codified as WAC 296-18A-010), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-020 Vocational rehabilitation advisory committee. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-020 (codified as WAC 296-18A-020), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-040 Definitions. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-040 (codified as WAC 296-18A-040), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-070 Application of certain timetables. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-070 (codified as WAC 296-18A-070), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-080 Referral and initial contact. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-080 (codified as WAC 296-18A-080), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-090 Initial evaluations. [Statutory Authority: RCW 51-.41.030. 82-24-055 (Order 82-40), § 296-18-090 (codified as WAC 296-18A-090), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-100 Rehabilitation plans. [Statutory Authority: RCW 51-.41.030. 82-24-055 (Order 82-40), § 296-18-100 (codified as WAC 296-18A-100), filed 11/30/82.]

Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-110 Modification to the rehabilitation plan. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-110 (codified as WAC 296-18A-110), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-120 Plan completion. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-120 (codified as WAC 296-18A-120), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-130 Application of certain timetables (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-130 (codified as WAC 296-18A-130), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-140 Return to work summary report (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-140 (codified as WAC 296-18A-140), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-160 Progress reports (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-160 (codified as WAC 296-18A-160), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-170 Return to work (self-insured claims). [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-170 (codified as WAC 296-18A-170), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-180 Vocational rehabilitation plan. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-180 (codified as WAC 296-18A-180), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-190 Responsibility of the injured worker. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-190 (codified as WAC 296-18A-190), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-200 Failure to meet responsibilities. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-200 (codified as WAC 296-18A-200), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-210 Resolution of vocational rehabilitation disputes. [Statutory Authority: RCW 51.04.020, 51.41.020 and 51.41.060. 83-17-110 (Order 83-25), § 296-18-210, filed 8/24/83. Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-210 (codified as WAC 296-18A-210), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-300 Registration of vocational rehabilitation counselors. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-300 (codified as WAC 296-18A-300), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-310 Qualifications for registration of vocational rehabilitation counselors. [Statutory Authority: RCW 51.04.020, 51.41.010 and 51.41.030. 83-17-051 (Order 83-24), § 296-18-310, filed 8/16/83. Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-310 (codified as WAC 296-18A-310), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-320 Qualifications for the registration of vocational rehabilitation firms. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-320 (codified as WAC 296-18A-320), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-330 Availability of the register. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-330 (codified as WAC 296-18A-330), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-340 Immediate deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-340 (codified as WAC 296-18A-340), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-350 Performance evaluations and deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-350 (codified as WAC 296-18A-350), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-360 Petition for reconsideration of the intent to remove. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-360 (codified as WAC 296-18A-360), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-370 Period of deregistration. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-370 (codified as WAC 296-18A-370), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

296-18A-400 Job modification assistance. [Statutory Authority: RCW 51.41.030. 82-24-055 (Order 82-40), § 296-18-400 (codified as WAC 296-18A-400), filed 11/30/82.] Repealed by 85-17-022 (Order 85-20), filed 8/13/85. Statutory Authority: RCW 51.32.095.

WAC 296-18A-420 Definitions. (1) "Employable" means having the skills and training that are commonly and currently necessary in the labor market to be gainfully employed on a reasonably continuous basis when considering the worker's: Age, education, experience, and physical and mental capabilities due to the industrial injury or subsequent reopening.

(2) "Gainful employment" means any occupation, not to exclude self-employment, which allows a worker to be compensated with wages or other earnings considering RCW 51.12.010.

(3) "Formal program" means an approved rehabilitation plan and the contents thereof as described in WAC 296-18A-450 that provides services necessary and likely to enable the injured worker to be employable at gainful employment.

(4) "Vocational rehabilitation counselor" means those persons determined by the department to have met the requirements of these rules regarding experience and training which qualify them to aid the injured workers to become employable at gainful employment.

(5) "Vocational rehabilitation provider" means any vocational rehabilitation counselor or firm that has a vendor number to bill for services the Washington department of labor and industries.

(6) "Vocational rehabilitation firm" means any entity comprised of vocational rehabilitation counselors that has a vendor number whether sole proprietorship, partnership, or corporation.

(7) "Vocational rehabilitation services" means services that are designed to enable the injured worker to become employable at gainful employment. The services may include, but not be limited to vocational evaluation, vocational counseling, job analysis, job modification, on-the-job training, or short-term training programs with job placement services provided.

(8) "Referral source" means either the state fund or self-insurer.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-420 (codified as WAC 296-18A-420), filed 8/13/85.]

WAC 296-18A-440 Reports. The following reports are required from the vocational rehabilitation provider for state fund referrals.

(1) Contact report. Contact with the injured worker shall be reported to the department within twenty-one calendar days of the date the referral was sent to the provider. Notification of contact shall be on a department provided form.

(2) Progress reports. A progress report will be made upon request from the referral source on a department approved format. The referral source is to be notified immediately of factors affecting plan completion or changes of status or changes in plan costs.

(3) Closing report. Upon completion of the formal program, a closing report to the referral source shall be submitted by the vocational rehabilitation provider. That report shall contain at least the following:

(a) Assessment of the injured worker's employability status at the time of completion of vocational services;

(b) Whether or not the injured worker has returned to work;

(c) Any remaining barriers to the injured worker becoming employable at gainful employment.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-440 (codified as WAC 296-18A-440), filed 8/13/85.]

WAC 296-18A-445 Self-insured reports. The following reports are required from the self-insurer to be sent to the self-insurance section.

(1) Self-insured rehabilitation referral. A form submitted no later than after paying ninety days of time loss after the initial filing or reopening of a claim. If more time is necessary, an extension may be requested on this form. The format for this form will be supplied by the department.

(2) Employability assessment report. If a vocational referral is not being made and an extension of time is not necessary, this form must be completed and submitted to the self-insured section no later than after paying ninety days of time loss after the initial filing or reopening of a claim. The format for this form will be supplied by the department.

(3) A vocational rehabilitation plan shall be submitted by the self-insurer after being signed by the injured worker, vocational rehabilitation provider and the employer.

(4) Rehabilitation outcome report. This form is to be submitted when all vocational rehabilitation services have been completed. The format for this form will be supplied by the department.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-445 (codified as WAC 296-18A-445), filed 8/13/85.]

WAC 296-18A-450 Vocational rehabilitation plan. (1) A vocational rehabilitation plan shall be approved by the referral source prior to its implementation. The plan shall be sent to all individuals with responsibilities under it. The plan shall contain the following:

(a) Assessment of the skills and abilities, including the physical and mental capabilities of the injured worker;

(b) The services necessary to enable the injured worker to become employable at gainful employment;

(c) Labor market information indicating the employability of the injured worker at plan completion;

(d) An estimate of the cost and the time necessary for the completion of the plan;

(e) A direct comparison of the injured worker's skills with potential types of employment to demonstrate a likelihood of success;

(f) If necessary, a job analysis of the injured worker's previous occupation, including earnings, may be included; and

(g) Any other information that will significantly affect the plan.

(2) The following priorities shall be addressed and justification given to why each preceding priority was not used.

(a) Return to the previous job with the same employer;

(b) Modification of the previous job with the same employer including transitional return to work;

(c) A new job with the same employer in keeping with any limitations or restrictions;

(d) Modification of the previous job with a new employer;

(e) A new job with a new employer or self-employment based upon transferable skills;

(f) A new job with a new employer or self-employment involving on-the-job training; and

(g) Short-term retraining and job placement.

(3) Each plan shall be signed by the vocational rehabilitation counselor and the injured worker. In state fund cases, a copy will be sent to the employer, attending physician, department, injured worker and any parties with responsibilities within the plan by the vocational rehabilitation counselor. The following statement shall be printed above the signatures:

> I have read the above plan and understand its contents. By signing this plan I agree to faithfully execute my responsibilities described in it.

(4) If the plan is interrupted for good cause this case will be returned to the referral source at the discretion of the referral source. At the end of such interruption, the referral source may return the referral to the original vocational provider to resume the plan or its preparation.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-450 (codified as WAC 296-18A-450), filed 8/13/85.]

WAC 296-18A-460 Performance criteria. (1) Vocational rehabilitation providers offering services under RCW 51.32.095 for state fund referrals shall be selected by the department, at the department's sole discretion, based upon providers' performance according to the following criteria.

(2) There shall be objective evaluation by the departments office of rehabilitation services, which shall address:

(a) Cost to medical aid fund including fees paid to vocational providers or other providers at the request of the vocational rehabilitation counselor;

(b) Cost to accident fund including time loss compensation, paid after vocational rehabilitation services begin less interruptions for medical instability, loss of earning power payments, and "training" costs pursuant to RCW 51.32.095(3);

(c) Cost to second injury fund due to approved job site modifications;

(d) Length of services provided, from time of referral to date of issuance of closing report;

(e) Ratio of referrals to completed plans;

(f) The outcome of the claim at the time of closure of vocational rehabilitation services which identifies the injured worker as (i) employable; (ii) returned to work; or (iii) other.

(3) The office of rehabilitation services shall also weigh the various objective criteria listed above by addressing the following subjective criteria:

(a) The case difficulty utilizing a screening tool developed by the office of rehabilitation services;

(b) The ability of the vocational rehabilitation counselor to comply with the rules contained in chapter 296-18A WAC and the law as contained in RCW 51.32.095;

(c) The adequacy of the vocational rehabilitation providers facilities shall also be considered.

(4) Audits. In order to ensure compliance with the above listed criteria, every vocational rehabilitation provider used by the department shall be subject to an audit of their facilities and files. Audits may be conducted upon petition or upon the department's own initiative. Audits may be for cause or at random and may consist of, but not be limited to, an on-site evaluation of each provider's facilities, files and records, including the accuracy of the records and the accuracy of billing for services. The vocational rehabilitation provider shall receive written notice at least forty-eight hours in advance of such audit.

The audit of vocational rehabilitation providers at locations outside the state of Washington shall be at the expense of the provider and the expense incurred in making such audit shall be paid by the provider.

Such expenses shall be calculated at the usual and normal per diem and travel expense rates established by law and in effect at the time the expenses are incurred.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-460 (codified as WAC 296-18A-460), filed 8/13/85.]

WAC 296-18A-470 Disputes. (1) In order to avoid delay in the vocational rehabilitation process and to allow resolution of disputes between the injured workers, employers and the referral source, a dispute resolution process is provided. The time limits in this section may be extended by the office of rehabilitation services when good cause is shown.

(2) The director must receive a dispute of the employability determination or formal plan, in writing, within fifteen calendar days from receipt of notification to the worker or employer. The dispute must include reasons for the request. The director, at his or her sole discretion, may initiate an investigation to determine further action on the request. A copy of all disputes received shall be sent to all interested parties.

(3) If necessary, and at the discretion of the director, the office of rehabilitation services will communicate with the aggrieved parties to attempt to resolve the dispute. If the dispute is not resolved, the director in his or her sole discretion may take such other action that he or she considers appropriate to protect the rights of the parties. The director shall inform the aggrieved parties of what action, if any was taken within thirty calendar days of receipt of the dispute from the aggrieved party.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-470 (codified as WAC 296-18A-470), filed 8/13/85.]

WAC 296-18A-480 Responsibilities. All parties will have the following responsibilities in assisting the injured worker to become employable at gainful employment:

(1) The attending physician shall maintain open communication with the injured worker's assigned vocational rehabilitation counselor and the referral source. The attending physician shall respond to any requests for information in a timely fashion and will do all that is possible to expedite the vocational rehabilitation process, including a definitive appraisal of physical capacities. The attending physician may review the vocational plan, and if the attending physician feels that the injured worker is not physically capable of carrying out the plan or the plan is unnecessary, based on current physical capacities, shall notify the referral source immediately of this opinion with the reasons for such opinion.

(2) The claims unit within the department shall:

(a) Notify the employer of the referral to a vocational rehabilitation provider;

(b) Send the employer a copy of the closing report; and

(c) Give written notice to an injured worker if a complaint of noncooperation has been made.

(3) The employer shall assist the vocational rehabilitation counselor in any way necessary to collect data regarding the former gainful employment of the injured worker. Further, the employer will assist the vocational rehabilitation counselor and attending physician to determine whether or not a modified job could be made available for employment of the injured worker.

(4) The injured worker shall cooperate with all reasonable requests from all responsible individuals in determining disability, developing and implementing the rehabilitation process. Should the injured worker fail to be cooperative, the sanctions as set out in RCW 51.32-.110 shall be applied.

(5) In assisting the injured worker to become employable at gainful employment, the provider is to follow the priorities as set out in RCW 51.32.095. Vocational rehabilitation providers actually assisting the injured worker shall have the burden of showing that they meet the qualifications to be a vocational rehabilitation counselor as set out in these rules. The vocational rehabilitation provider shall comply with all the rules in chapter 296-18A WAC and Title 51 RCW, whether the injured worker is referred by the department or a self-insurer under the following criteria:

(a) Develop a formal program to assist the eligible injured worker to become employable at gainful employment;

(b) Maintain accurate records that will be periodically reviewed by the office of rehabilitation services;

(c) Notify the referral source of noncooperative behavior on the part of the injured worker; and

(d) Keep all parties informed of the progress and development of the formal program.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-480 (codified as WAC 296-18A-480), filed 8/13/85.]

WAC 296-18A-490 Billing for vocational services. (1) Vocational rehabilitation providers must comply with the rules contained in chapter 296-20 WAC as they pertain.

(2) Vocational rehabilitation providers must carry general liability insurance, automobile liability insurance, and errors and omission/malpractice insurance.

(3) All vocational services must be prior authorized by the referral source, except immediate job placement.

(4) Charges for the following are considered overhead and will not be paid:

(a) Typing of reports and copies of reports;

(b) Long distance phone call charges and unanswered phone calls;

(c) In-house staffing time;

(d) Postage.

(5) All bills must be itemized on referral source approved bill forms. The billed charges must be justified and consistent with written reports. Any exception to these rules must be thoroughly documented. If charges are not documented, or justified, or consistent, payment will be reduced or denied.

(6) Vocational services must be billed using the following procedure codes. Time units of service are to be stated in tenth of hour blocks or six minutes per time unit. Mileage units of service are to be stated in total miles for the round trip to the nearest mile. Unless otherwise specifically noted, reimbursement rates are achieved by multiplying the total units of service by the relative value unit for the procedure code and then multiplying the total by the current conversion factor for medicine (WAC 296-20-135).

CODE	DESCRIPTION	RELATIVE VALUE UNITS
VO205	Job modification consultant.	4.1
VO210	Consult with doctor, attorney, employer, persons other than the claimant.	4.1
VO212	Review case claim file.	4.1
VO222	Vocational exploration (services provided in conjunction with the injured worker).	4.1
VO223	Vocational counseling (i.e., plan development, placement, etc.).	4.1
VO225	Job analysis (on-site survey of a specific job).	4.1
VO226	Identify and analyze past work skills for transferability.	4.1
VO227	Labor market survey (determination of jobs available in geographic location).	4.1
VO228	Work evaluation - individual.	4.1
VO229	Work evaluation - group, up to a group of five persons.	1.8
VO231	Vocational test administration and scoring.	4.1
VO233	Interpretation of vocational testing and work evaluation.	4.1
VO238	Job placement/job development services to individual injured workers.	4.1
VO239	Job seeking skills instruction-groups (motivation and personal skills training to a group of injured workers) (2-10 workers, maximum 40 billing hours per worker).	1.8
VO242	Monitor, approved rehabilitation plan.	4.1
VO245	Coordinations of services with (specify) job station, work evaluation, vocational testing, ancillary service.	4.1
VO251	Report preparation: Initial contact report.	Flat fee $5
VO252	Progress report.	Flat fee $25
VO253	Report preparation for reports other than VO251, 252, 258 and 259.	4.1
VO258	Employability statement form with initial evaluation completed.	4.1 up to max. of $150
VO259	Employability statement form without initial evaluation completed.	4.1 up to max. of $450
VO260	Travel/wait time (waiting time is limited to one hour). If more than one client is being served in the area, travel time must be split among all clients.	1.8
VO261	Bridge and ferry tolls.	Reimbursement
VO262	Mileage per mile. If more than one client is being served in the area, mileage must be split among clients.	18¢ per mile
VO263	Provide and monitor a "job station" (a work activity program designed to evaluate or increase an individuals vocational abilities).	4.1
VO264	Work behavior modification.	4.1
VO274	Conducting a job club - maximum 40 billable hours. (A structured search for work programs for groups of injured workers.)	1.8
VO280	Placement by evaluation (placement agencies only) maximum of two hours assessment of placement potential, includes report to department or VRC.	2.9
VO282	Placement made (employment agencies) flat fee paid on placement.	$300 Fixed fee
RETRAINING SERVICE (Fees vary by specific plans)		
RO310	Tuition and training fee	
RO312	Training supplies	
RO315	Training equipment	
RO320	Examination and license fees	
RO330	Transportation/mileage	
RO332	Parking	Reimbursement
RO334	Bridge and ferry tolls	Reimbursement
RO336	Commercial fares	Reimbursement
RO340	Books	
RO350	Other	
RO360	Board	
RO370	Room	
RO380	Job modification	

CODE	DESCRIPTION	RELATIVE VALUE UNITS

The department or self–insurer will authorize child care as part of a department or self–insurer approved formal program. Payment for child care services will be made to licensed day care providers or family members other than the injured worker or his/her spouse.

RO390	Child care/licensed day center. Hourly rate per child six hours or less	1.1
RO392	Child care/licensed day center. Daily rate per child seven to nine hours	7.5
RO395	Child care/nonlicensed provider. Hourly rate per child six hours or less	0.9
RO397	Child care/nonlicensed provider. Daily rate per child seven to nine hours	6.4

[Statutory Authority: RCW 51.32.095. 85–17–022 (Order 85–20), § 296–18–490 (codified as WAC 296–18A–490), filed 8/13/85.]

WAC 296–18A–500 Self–Insurers. (1) No later than paying ninety days of time loss following the initial filing or reopening of a claim, the self–insurer shall notify the self–insurance section as to whether or not vocational rehabilitation services are necessary and likely to enable the injured worker to become employable at gainful employment. Each of these cases will be reviewed by the self–insurance section. The criteria to determine employability will be the same as for the state fund. If the injured worker is determined employable, the self–insurer will submit an employability assessment form which contains objective reasons why the injured worker is employable. Within twenty calendar days of receipt of an employability assessment form, the supervisor's designee within the self–insurance section will inform the self–insurer and the injured worker as to whether or not self–insurers determination of employability is approved. If an employability determination cannot be made due to medical instability, the self–insured shall request an extension by notifying the self–insurance section of the injured worker's condition and when a determination can be made. If the request for extension is not approved, notice will be sent within fifteen calendar days of receipt.

(2) The supervisor's designee within the self–insurance section of the department will receive from the self–insurer the vocational rehabilitation plan signed by the injured worker and employer. A review of the vocational rehabilitation plan by the supervisor's designee will be initiated upon request by the employer or the injured worker. The supervisor's designee shall notify the parties within fifteen calendar days of receipt of the results of the review.

At the completion of each case, the self–insurer shall provide the self–insurance section and the office of rehabilitation services a rehabilitation outcome report on a form prescribed by the department.

[Statutory Authority: RCW 51.32.095. 85–17–022 (Order 85–20), § 296–18–500 (codified as WAC 296–18A–500), filed 8/13/85.]

WAC 296–18A–510 Vocational rehabilitation counselor qualifications. (1) All vocational rehabilitation counselors who were registered by the department prior to May 16, 1985, will remain on the list and be eligible to receive referrals. The department is not obligated to make referrals to anyone on this list.

(2) When it is determined an injured worker is eligible for vocational rehabilitation services, the referral source shall authorize such services. Selection of the appropriate provider of vocational services is at the sole discretion of the referral source. Selected vocational rehabilitation counselors must meet one or more of the following categories of experience and education:

(a) A doctorate or masters degree in rehabilitation counseling, psychology, counseling and guidance, social work, or educational psychology; and a minimum of one year of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers;

(b) A masters degree with twenty–four credit hours in a combination of rehabilitation philosophy, rehabilitation history, rehabilitation ethics, medical aspects of disability, psychological aspects of disability, job placement, occupational information, counseling theory, personal and vocational adjustment, work evaluation, practicum in subjects listed in this subsection, or coursework relating to counseling and subjects listed in this subsection; and a minimum of two years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers;

(c) A bachelors degree in rehabilitation counseling, psychology, counseling and guidance, social work, or educational psychology; and a minimum of two years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services with industrially injured workers; or

(d) A bachelors degree with twenty–four credit hours in a combination of rehabilitation philosophy, rehabilitation history, rehabilitation ethics, medical aspects of disability, psychological aspects of disability, job placement, occupational information, counseling theory, personal and vocational adjustment, work evaluation, practicum in subjects listed in this subsection, or coursework relating to counseling and subjects listed in this subsection; and a minimum of three years of experience in vocational counseling, job placement, vocational assessment, or other documented areas of vocational rehabilitation services; with industrially injured workers;

(e) Has been a registered vocational counselor in Washington state.

(3) An intern is an individual who meets the minimum educational requirements as set forth in subsection (2)(a) through (e) of this section, but not the experience requirements. When the intern is employed, the vocational rehabilitation provider shall provide the name of the intern's supervisor. The intern supervisor will be responsible for all rehabilitation work done by the intern. The intern supervisor will co–sign all reports submitted

by the intern. The intern must be designated as such on all reports. At the end of the time requirement the intern may apply for a vendor number as a vocational rehabilitation provider.

(4) In order to receive or maintain a provider account number, the provider shall submit certified copies of each counselor's college transcript showing the degree last obtained. A statement of each counselor's past experience in counseling of industrially injured workers must also be submitted. The statement must include the names of former and current vocational counselors and firms the individual was employed by.

(5) It is the responsibility of the vocational counselor to be familiar with the industrial insurance rules and laws of the state of Washington. The vocational counselor must act in a professional manner and comply with the code of professional ethics for vocational rehabilitation counselors.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-510 (codified as WAC 296-18A-510), filed 8/13/85.]

WAC 296-18A-520 Job modification assistance. (1) As provided for in section 13, chapter 63, Laws of 1982 (RCW 51.32.250), the supervisor in his or her discretion may pay job modification costs in an amount not to exceed five thousand dollars from the department per worker per job modification. This payment is intended to be a cooperative participation with the employer and funds shall be taken from the appropriate account within the second injury fund. The employer may add to this amount with their own contribution.

(2) An employer requesting job modification assistance must submit to the department a job modification assistance application.

(3) The job modification assistance application shall include, but not be limited to:

(a) A document supporting the need for job modification;

(b) A description of the job modification; and

(c) An itemized account of each expense to be incurred in the job modification. Job modification assistance applications shall be submitted on a form prescribed by the department.

(4) The supervisor shall accept, reject, or modify the job modification application within thirty days of receipt. Notification of the supervisor's acceptance, rejection, or modification shall be in writing.

[Statutory Authority: RCW 51.32.095. 85-17-022 (Order 85-20), § 296-18-520 (codified as WAC 296-18A-520), filed 8/13/85.]

Chapter 296-20 WAC
MEDICAL AID RULES

WAC

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Reviser's note: Chapter 296-20 WAC, previously codified WAC 296-20-010 through 296-20-735, "PHYSICIANS MEDICAL AID RULES AND FEES," which were filed 9/17/64. Such rules were decodified as apparently superseded by similar rules, filed 7/20/66, which were published in Supplement #2 (7/1/68) as an appendix to this chapter. The 1966 rules were expressly repealed by Order 68-7, codified herein as chapters 296-20, 296-21, 296-22, and 296-23 WAC.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-20-040 Modalities not requiring prior authorization after sixty days. [Order 68-7, § 296-20-040, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-20-050 Periodical clinical reports. [Order 68-7, § 296-20-050, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-061.

296-20-060 Fees for concurrent treatment. [Order 68-7, § 296-20-060, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-071.

296-20-061 Periodic clinical progress reports. [Order 71-6, § 296-20-061, filed 6/1/71; Order 70-12, § 296-20-061, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-050.] Repealed by Order 74-39, filed 11/22/74.

296-20-070 Consultations. [Order 68-7, § 296-20-070, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-051.

296-20-080 Private room—Special nurses. [Order 68-7, § 296-20-080, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-091.

296-20-085 Isolation of infected cases. [Order 71-6, § 296-20-085, filed 6/1/71; Order 70-12, § 296-20-085, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-085, filed 11/27/68, effective 1/1/69.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51-.04.030, and 51.16.120(3).

296-20-090 Reopenings. [Order 68-7, § 296-20-090, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-097.

296-20-095 Unrelated elective surgery. [Order 68-7, § 296-20-095, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71. Later promulgation, see WAC 296-20-081.

296-20-105 Laboratory. [Order 68-7, § 296-20-105, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-20-130 Medical aid contracts. [Order 74-7, § 296-20-130, filed 1/30/74; Order 70-12, § 296-20-130, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-130, filed 11/27/68, effective 1/1/69.] Repealed by Order 77-27, filed 11/30/77, effective 1/1/78.

296-20-131 Advance authorization required for nonstandard treatment. [Order 74-7, § 296-20-131, filed 1/30/74.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-20-14001 Conversion factor table—Hospital. [Order 75-39, § 296-20-14001, filed 11/28/75, effective 1/1/76.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

WAC 296-20-010 General information. (1) The following rules and fees are promulgated pursuant to RCW 51.04.020. This fee schedule is intended to cover all services for accepted industrial insurance claims. All fees listed are the maximum fees allowable. Practitioners shall bill their usual and customary fee for services. IF A USUAL AND CUSTOMARY FEE FOR ANY PARTICULAR SERVICE IS LOWER TO THE GENERAL PUBLIC THAN LISTED IN THE FEE SCHEDULE, THE PRACTITIONER SHALL BILL THE DEPARTMENT OR SELF-INSURER AT THE LOWER RATE. The department or self-insurer will pay the lesser of the billed charge or the fee schedule maximum allowable.

(2) The rules contained in the introductory section pertain to *all* practitioners regardless of specialty area or limitation of practice. Additional rules pertaining to specialty areas will be found in the appropriate section.

(3) The maximum allowable fee for a procedure is determined by multiplying the unit value of a procedure by the appropriate conversion factor, per the conversion factor tables listed in WAC 296-20-135 to 296-20-155.

(4) Initial and follow-up visit charges by practitioners include routine examinations, physical modalities, injections, minor procedures, etc., not otherwise provided for in this schedule. No fee is payable for missed appointments unless the appointment is for an examination arranged by the department or self-insurer.

(5) When a claim has been accepted by the department or self-insurer, no provider or his/her representative may bill the worker for the difference between the

allowable fee and his usual and customary charge. Nor can the worker be charged a fee, either for interest or completion of forms, related to services rendered for the industrial injury or condition.

(6) Practitioners must maintain documentation in claimant medical or health care service records adequate to verify the level, type, and extent of services provided to claimants.

(7) When an injured worker is being treated concurrently for an unrelated condition the fee allowable for the service(s) rendered must be shared proportionally between the payors.

(8) Correspondence: Correspondence pertaining to state fund and department of energy claims should be sent to Department of Labor and Industries, Claims Administration, MS: HC-241, Olympia, Washington 98504. Accident reports should be sent to Department of Labor and Industries, P.O. Box 9001, Olympia, Washington 98504-9001. Billings should be sent to Department of Labor and Industries, P.O. Box 9002, Olympia, Washington 98504-9002. State fund claims have six digit numbers preceded by a letter other than "S," "T," or "V."

Department of energy claims have seven digit numbers with no letter prefix.

All correspondence and billings pertaining to *crime victims* claims should be sent to Crime Victims Division, Department of Labor and Industries, 925 Plum Street, MS: HC-720, Olympia, Washington 98504.

Crime victim claims have six digit numbers preceded by a "V."

All correspondence and billings pertaining to self-insured claims should be sent directly to the employer or his service representative as the case may be. A listing of self-insured employers and service representatives can be found in Appendix B.

Self-insured claims are six digit numbers preceded by a "S," or "T."

Communications to the department or self-insurer must show the patient's full name and claim number. If the claim number is unavailable, providers should contact the department or self-insurer for the number, indicating the patient's name, Social Security number, the date and the nature of the injury, and the employer's name. A communication should refer to one claim only. Correspondence must be legible and reproducible, as department records are microfilmed. Correspondence regarding specific claim matters should be sent directly to the department in Olympia or self-insurer in order to avoid rehandling by the service location.

(9) APPENDIX C is a listing of the department's various local service locations. These facilities should be utilized by providers to obtain information, supplies, or assistance in dealing with matters pertaining to industrial injuries.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-010, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-010, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-010, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-010, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-010, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-010, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-010, filed 1/30/74; Order 70-12, § 296-20-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-010, filed 11/27/68, effective 1/1/69.]

WAC 296-20-01001 Medical advisory industrial insurance committee. (1) The Washington state medical association shall appoint an advisory and utilization review committee composed of nine members, one of whom shall be an osteopathic physician nominated by the Washington state osteopathic medical association. The remaining members should be selected from the following specialty groups: Family or general practice, orthopaedics, neurology or neurosurgery, general surgery, physical medicine and rehabilitation, psychiatry, internal medicine, and industrial medicine.

(2) The committee will function as an advisor to the department with respect to policies affecting medical care and rehabilitation, quality control and supervision of medical care, and the establishment of rules and regulations. It shall also advise and assist the department in the resolution of controversies, disputes and problems between the department and the providers of medical care. It will also advise and assist the department in the education of members of the medical community with regard to the roles of the physician, the department and the employer in providing the needs and care of the injured worker.

(3) The committee shall normally meet on a monthly basis or as necessity dictates. The department will reimburse members of the committee for each meeting.

[Order 77-27, § 296-20-01001, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-01001, filed 12/1/77; Emergency Order 77-16, § 296-20-01001, filed 9/6/77; Order 76-34, § 296-20-01001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-01002 Definitions. TERMINATION OF TREATMENT: When treatment is no longer required and/or the industrial condition is stabilized, a report indicating the date of stabilization should be submitted to the department or self-insurer. This is necessary to initiate closure of the industrial claim. The patient may require continued treatment for conditions not related to the industrial condition; however, financial responsibility for such care must be the patient's.

UNUSUAL OR UNLISTED PROCEDURE: Value of unlisted services or procedures should be substantiated "by report" (BR).

"BY REPORT": BR (by report) in the value column indicates that the value of this service is to be determined by report (BR) because the service is too unusual, variable or new to be assigned a unit value. The report should provide an adequate definition or description of the services or procedure (e.g., operative or narrative report), using any of the following as indicated:

(1) Diagnosis;

(2) Size, location and number of lesion(s) or procedure(s) where appropriate;

(3) Major surgical procedure and supplementary procedure(s);

(4) Whenever possible, list the nearest similar procedure by number according to this schedule;

(5) Estimated follow-up;

(6) Operative time.

The department or self-insurer may adjust BR procedures when such action is indicated.

"INDEPENDENT OR SEPARATE PROCEDURE": Certain of the listed procedures are commonly carried out as an integral part of a total service, and as such do not warrant a separate charge. When such a procedure is carried out as a separate entity, not immediately related to other services, the indicated value for "independent procedure" is applicable.

SV. ITEMS: Sv (service) procedures are not essentially a single procedure, rather they are comprised of several other procedures. These "Sv" procedures although identified by a specific code number, can be *described* only in terms of the several services included. Therefore, unit values are not indicated for Sv procedures and total value is derived from the values of the individual services performed. These Sv procedures require "BR" (see above) information to substantiate billing.

MODIFIED WORK STATUS: The injured worker is not able to return to his previous work, but is physically capable of carrying out work of a lighter nature. Injured workers should be urged to return to modified work as soon as reasonable as such work is frequently beneficial for body conditioning and regaining self confidence.

Under RCW 51.32.090, when the employer has modified work available for the worker, the employer must furnish the doctor and the worker with a statement describing the available work in terms that will enable the doctor to relate the physical activities of the job to the worker's physical limitations and capabilities. The doctor shall then determine whether the worker is physically able to perform the work described. The employer may not increase the physical requirements of the job without requesting the opinion of the doctor as to the worker's ability to perform such additional work. If after a trial period of reemployment the worker is unable to continue with such work, his time loss compensation will be resumed upon certification by the attending doctor.

If the employer has no modified work available, the department should be notified immediately, so vocational assessment can be conducted to determine whether the worker will require assistance in returning to work.

REGULAR WORK STATUS: The injured worker is physically capable of returning to his/her regular work. It is the duty of the attending doctor to notify the worker and the department or self-insurer, as the case may be, of the specific date of release to return to regular work. Compensation will be terminated on the release date. Further treatment can be allowed as requested by the attending doctor if the condition is not stationary and such treatment is needed and otherwise in order.

TOTAL TEMPORARY DISABILITY: Full-time loss compensation will be paid when the worker is unable to return to any type of reasonably continuous gainful employment as a direct result of an accepted industrial injury or exposure.

TEMPORARY PARTIAL DISABILITY: Partial time loss compensation may be paid when the worker can return to work on a limited basis or return to lesser paying job is necessitated by the accepted injury or condition. The worker must have a reduction in wages of at least five percent before consideration of partial time loss can be made. No partial time loss compensation can be paid after the worker's condition is stationary.

ALL TIME LOSS COMPENSATION MUST BE CERTIFIED BY THE ATTENDING DOCTOR BASED ON OBJECTIVE FINDINGS.

PERMANENT PARTIAL DISABILITY: Any anatomic or functional abnormality or loss after maximum rehabilitation has been achieved, which is determined to be stable or nonprogressive at the time the evaluation is made. When the attending doctor has reason to believe a permanent impairment exists, the department or self-insurer should be notified. Specified disabilities (amputation or loss of function of extremities, loss of hearing or vision) are to be rated utilizing a nationally recognized impairment rating guide. Unspecified disabilities (internal injuries, spinal injuries, mental health, etc.) are to be rated utilizing the category system detailed under WAC 296-20-200 et al. for injuries occurring on or after October 1, 1974. Appendix D contains a schedule of the permanent disability maximum awards. UNDER WASHINGTON LAW DISABILITY AWARDS ARE BASED SOLELY ON PHYSICAL OR MENTAL IMPAIRMENT DUE TO THE ACCEPTED INJURY OR CONDITIONS WITHOUT CONSIDERATION OF ECONOMIC FACTORS.

TOTAL PERMANENT DISABILITY: Loss of both legs or arms, or one leg and one arm, total loss of eyesight, paralysis or other condition permanently incapacitating the worker from performing any work at any gainful employment. When the attending doctor feels a worker may be totally and permanently disabled, he should communicate this information immediately to the department or self-insurer. A vocational evaluation and an independent rating of disability may be arranged by the department prior to a determination as to total permanent disability. Coverage for treatment does not usually continue after the date an injured worker is placed on pension.

FATAL: When the attending doctor has reason to believe a worker has died as a result of an industrial injury or exposure, the doctor should notify the nearest department service location (see Appendix C) or the self-insurer immediately. Often an autopsy is required by the department or self-insurer. If so, it will be authorized by the service location manager or the self-insurer. Benefits payable include burial stipend and monthly payments to the surviving spouse and/or dependents.

DOCTOR: For these rules, means a person licensed to practice one or more of the following professions: Medicine and surgery; osteopathic; chiropractic; drugless therapeutics; podiatry; dentistry; optometry.

Only those persons so licensed may sign report of accident forms and time loss cards except as provided in WAC 296-20-100.

HEALTH SERVICES PROVIDER OR PROVIDER: For these rules means any person, firm, corporation, partnership,

association, agency, institution, or other legal entity providing any kind of services related to the treatment of an industrially injured worker. It includes, but is not limited to, hospitals, medical doctors, dentists, chiropractors, vocational rehabilitation counselors, osteopaths, pharmacists, podiatrists, physical therapists, occupational therapists, massage therapists, psychologists, drugless therapeutics, and durable medical equipment dealers.

PRACTITIONER: For these rules, means any person defined as a "doctor" under these rules, or licensed to practice one or more of the following professions: Audiology; physical therapy; occupational therapy; pharmacy; prosthetics; orthotics; psychology; nursing; physician or osteopathic assistant; and massage therapy.

PHYSICIAN: For these rules, means any person licensed to perform one or more of the following professions: Medicine and surgery; or osteopathic.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-01002, filed 10/1/86, effective 11/1/86; 83-24-016 (Order 83-35), § 296-20-01002, filed 11/30/83, effective 1/1/84; 83-16-066 (Order 83-23), § 296-20-01002, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01002, filed 12/23/80, effective 3/1/81.]

WAC 296-20-015 Who may treat. Only that treatment which falls within the scope and field of the practitioner's license to practice will be allowed as treatment to an injured worker.

Para-professionals, who are not independently licensed, must practice under the direct supervision of a licensed health care professional whose scope of practice and specialty training includes the service provided by the para-professional.

Procedures and evaluations requiring specialized skills and knowledge will be limited to board certified or board qualified physicians, as specified by the American Medical Association or the American Osteopathic Association.

Practitioners may be formally refused permission to treat cases coming under the jurisdiction of the department for reasons that are, in the opinion of the department, to the best interest of the workers and the funds created for their protection.

Reasons for holding a practitioner ineligible to treat industrial insurance cases include, but are not necessarily limited to any one or a combination of the following:

(1) Failure, neglect or refusal to submit complete, adequate and detailed reports.

(2) Failure, neglect or refusal to respond to requests by the department for additional reports.

(3) Failure, neglect or refusal to observe and comply with the department's orders and medical aid rules.

(4) Persistent failure to notify the department immediately and prior to burial in any death where the cause of death is not definitely known or where there is question of death being due to an industrial injury.

(5) Persistent failure to recognize emotional and social factors impeding recovery of injured workers.

(6) Persistent unreasonable refusal to comply with the recommendations of board certified or qualified specialists who have examined the worker.

(7) Submission of false or misleading reports to the department.

(8) Collusion with any other persons in submission of false or misleading information to the department.

(9) Submission of inaccurate or misleading bills.

(10) Persistent submission of false or erroneous diagnosis.

(11) Knowingly submitting bills to an injured worker for treatment of an industrial condition for which the department has accepted responsibility.

(12) Persistent use of:

(a) Treatment of controversial or experimental nature;

(b) Contraindicated or hazardous treatment measures;

(c) Continuation of treatment measures past stabilization of the industrial condition or after maximum improvement has been obtained;

(d) Nonspecific treatment measures;

(e) Treatment terminating in unsatisfactory results.

(13) Charging or attempting to charge industrially injured workers fees in addition to the fee paid by the department or self-insurer for care of the industrial injury or billing for difference between the maximum allowable fee set forth in this schedule and usual and customary charges.

(14) Conviction in any court of any offense involving moral turpitude, in which case the record of such conviction shall be conclusive evidence.

(15) The use or prescription for use, of narcotic, addictive, habituating or dependency inducing drugs in any way other than for therapeutic purposes.

(16) Repeated acts of gross misconduct in the practice of the profession.

(17) Declaration of mental incompetency by a court of competent jurisdiction.

(18) The finding of any peer group disciplinary board of reason to suspend or revoke a practitioner's practice privilege temporarily or permanently.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-015, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-015, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-015, filed 11/24/76; effective 1/1/77; Order 74-4, § 296-20-015, filed 1/30/74; Order 71-6, § 296-20-015, filed 6/1/71; Order 70-12, § 296-20-015, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-015, filed 11/27/68, effective 1/1/69.]

WAC 296-20-01501 Physician's assistant rules. (1) Physicians' assistants may perform only those medical services in industrial injury cases, for which the physician's assistant is trained and licensed, under the control and supervision of a licensed physician. Such control and supervision shall not be construed to require the personal presence of the supervising physician.

(2) Physicians' assistants may perform those medical services which are within the scope of their physician's assistant license for industrial injury cases within the limitations of subsection (3) of this section.

(3) Advance approval must be obtained from the department to treat industrial injury cases. To be eligible to treat industrial injuries, the physician's assistant must:

(a) Provide the department with a copy of his license.

(b) Provide the name and address and specialty of the supervising physician.

(c) Provide the department with the evidence of a reliable and rapid system of communication with the supervising physician.

(4) Physicians' assistants may prepare report of accident, time loss cards, and progress reports for the supervising physician's signature. Physicians' assistants cannot submit such information under his/her signature.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-01501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-01501, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-01501, filed 11/30/79, effective 1/1/80.]

WAC 296-20-020 Acceptance of rules and fees. The filing of an accident report or the rendering of treatment to an injured worker who comes under the department's or self-insurer's jurisdiction, as the case may be, constitutes acceptance of the department's medical aid rules and compliance with its rules and fees.

In accordance with RCW 51.28.020 of the industrial insurance law, when a doctor renders treatment to an injured worker entitled to benefits under the law, "it shall be the duty of the physician to inform the injured worker of his rights under this title and to lend all necessary assistance in making the application for compensation and such proof of other matters as required by the rules of the department without charge to the worker," an injured worker shall not be billed for treatment rendered for his accepted industrial injury or occupational disease.

The department or self-insurer must be notified immediately, when an unrelated condition is being treated concurrently with an industrial injury. See WAC 296-20-055 for specific information required.

When there is questionable eligibility, (i.e., service is not usually allowed for industrial injuries or investigation is pending, etc.) the provider may require the worker to pay for the treatment rendered.

In cases of questionable eligibility where the provider has billed the injured worker or other insurance, and the claim is subsequently allowed, the provider shall refund the injured worker or insurer in full and bill the department or self-insurer for services rendered at fee schedule rates using billing instructions outlined in WAC 296-20-125.

Cases in which there is a question of medical ethics or quality of medical care, will be referred to the Washington state medical association's medical advisory and utilization review committee to the department of labor and industries for recommendations.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-020, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-020, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-020, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-020, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-020, filed 11/22/74, effective 1/1/75; Order 71-6, § 296-20-020, filed 6/1/71; Order 70-12, § 296-20-020, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-020, filed 11/27/68, effective 1/1/69.]

WAC 296-20-02001 Penalties. RCW 51.48.060 of the industrial insurance law provides that a civil penalty of $100.00 may be assessed against any doctor who; ". . . fails, neglects or refuses to file a report with the director, as required by this title, within five days of treatment showing the condition of the injured worker at the time of treatment, a description of the treatment given, and an estimate of the probable duration of the injury, or who fails or refuses to render all necessary assistance to the injured worker, as required by this title, . . ."

RCW 51.48.080 of the industrial insurance law provides that, "Every person, firm or corporation who violates or fails to obey, observe or comply with any rule of the department promulgated under authority of this title, shall be subject to a penalty of not to exceed two hundred and fifty dollars."

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-02001, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-02001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-02005 Keeping of records. A health services provider who requests from the department payment for providing services shall maintain all records necessary for the director's authorized auditors to audit the provision of services. A provider shall keep all records necessary to disclose the extent of services the provider furnishes to industrially injured workers. At a minimum, these records must provide and include prompt and specific documentation of the level and type of service for which payment is sought. Records must be maintained for audit purposes for a minimum of five years.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-02005, filed 10/1/86, effective 11/1/86.]

WAC 296-20-02010 Conduct of audits. (1) In order to ensure that the industrially injured worker receives the services paid for by the state of Washington, the department of labor and industries conducts audits of providers of medical, dental, vocational rehabilitation, and other health services furnished to industrially injured workers. Audits may be for cause or at random and may consist of, but not be limited to, an on-site review of any of a provider's files and records related to the provision of services to industrially injured workers or the submission of any bill to the department for payment for such services.

(2) In the conduct of such audits, the director or the director's authorized auditors may examine all records, or portions thereof, including patient records, related to services rendered by a health services provider with payment requested of, or made by the department, notwithstanding the provisions of any statute which may make

or purport to make such records privileged or confidential. The examination of records may include the utilization of statistical sampling methodologies and projections based upon sample findings.

(3) No original records shall be removed from the premises of a health services provider by the auditors. The department shall destroy all copies of patient medical records made during an audit, and such records destruction will be accomplished not later than ninety days after completion of the audit, investigation, or proceeding.

(4) The department will give ten working days written notification to any provider, except as authorized in WAC 296-18-460, that the provider's billing and injured worker claimant records will be reviewed by an auditor at the provider's place(s) of business to determine compliance with medical aid rules and standards.

(5) A provider, or the provider's designee, will be notified upon the auditor's arrival at the provider's place of business. The notification takes place during an entrance interview attended by the auditor and the provider or the provider's designee. The provider is to furnish the records requested by the auditor and provide a work space adequate and suitable for the auditor to conduct the records review at the provider's place(s) of business.

(6) A provider, or the provider's designee, will be notified by the auditor upon conclusion of the review of records at the provider's place(s) of business. The auditor will advise the provider, or the provider's designee, that an exit conference can be scheduled. The purpose of the exit conference is to informally review and discuss the preliminary audit findings. The conference is conducted at the provider's place of business. The conference may be waived at the discretion of the provider.

(7) The provider will be given a draft audit report for review and comment. Upon receipt from the department of a draft audit report, the provider will have fifteen working days to submit written comments on the draft audit report or to request to meet in conference in Olympia with the director's authorized representative(s) to discuss the draft audit report. Written comments by the provider will be incorporated into a final audit report.

(8) The department will issue a final audit report to each audited provider. If as a result of the audit it is determined that moneys are due the department, the final audit report will be accompanied by an order and notice identifying the amount due and any interest. If as a result of the audit it is determined that no moneys are due to the department, the final audit report will not be accompanied by an order and notice. In either case, the final audit report will tell the provider of the department's process for addressing disputes which might arise as a result of the audit.

(9) A provider, upon receipt from the department of a final audit report not accompanied by an order and notice, shall have sixty calendar days to submit to the department a written request for reconsideration of any audit finding or directive which the audited provider believes to be inconsistent with statute, rule or departmental policy. Requests must be submitted to: Director, department of labor and industries. A provider requesting reconsideration shall be granted a conference in Olympia presided over by the director or the director's authorized representative. The director or the director's authorized representative shall issue a final decision within thirty days of concluding the conference. That decision shall become final within sixty days from the date the decision is communicated to the provider unless an appeal is filed with the board of industrial insurance appeals. The conference in response to the final audit report is the final level of appeal within the department.

(10) Based upon the findings of an audit or other proceeding, the director or the director's authorized representative may order repayment by a provider of any excess payments received by the provider under Title 51 RCW to which the provider was not entitled, plus interest on the amount of any excess payments received by a provider to which the provider was not entitled. In the determination of excess payments, the department may use projections based upon sample findings.

(11) A department order or decision making demand, whether with or without penalty, for repayment of sums paid to a provider of medical, dental, vocational rehabilitation, or other health services rendered to an industrially injured worker, shall become final within twenty days from the date the order or decision is communicated to the provider unless a written request for reconsideration is filed with the department of labor and industries, Olympia, or an appeal is filed with the board of industrial insurance appeals.

(12) A provider, upon receipt from the department of a final audit report accompanied by an order and notice, and aggrieved by the department order and notice making demand, whether with or without penalty, for repayment of sums paid to that provider, who files with the department in Olympia a timely written request for reconsideration of the order and notice making demand, shall be granted a conference in Olympia presided over by the director or the director's authorized representative. The director or the director's authorized representative shall issue a final decision within thirty days after concluding the conference. That decision shall become final within twenty days from the date the decision is communicated to the provider unless the provider files an appeal with the board of industrial insurance appeals.

(13) The department may conduct or contract for hospital bill review services from time to time. Subsections (4), (5), (6), (7), (8), and (9) of this section shall not apply to hospital bill reviews.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-02010, filed 10/1/86, effective 11/1/86.]

WAC 296-20-02015 Interest on excess payments. (1) When a provider of health services receives a payment to which that provider is not entitled, the provider must repay the excess payment, plus accrued interest, without regard to whether the excess payment occurred due to provider or department error or oversight, except as provided in subsection (2) of this section.

(2) When a provider:

(a) Accepts in good faith a determination by the department that a worker is eligible for benefits under Title 51 RCW;

(b) Provides, bills, and receives payment for services to that worker and the department later determines that the worker was ineligible for services during that period no interest will begin to accrue until notification is received by the provider that the worker was ineligible.

(3) Interest accrues on excess payments at the rate of one percent per month or portion of a month beginning on the thirty–first day after payment was made. Where partial repayment of an excess payment is made, interest accrues on the remaining balance.

(4) The department reserves the option of either requesting the provider to remit the amount of the excess payment and accrued interest to the department or offsetting excess payments and accrued interest against future payments due to the provider.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–20–074 (Order 86–36), § 296–20–02015, filed 10/1/86, effective 11/1/86.]

WAC 296–20–023 Third party settlement--Excess recoveries. In cases where a third party settlement has been made resulting in an excess recovery subject to offset from the injured worker's future benefits or compensation due, the department or self–insurer is not liable for payment for services rendered by providers. The injured worker should be treated and billed in accordance with the rules and instructions contained in chapters 296–20 through 296–23 WAC. When bills are processed against the amount of the excess recovery, the department will notify the provider on the remittance advice. The department or self–insurer will resume financial responsibility to or on behalf of the injured worker when the amount of such excess has been reduced to zero.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–023, filed 2/28/86, effective 4/1/86.]

WAC 296–20–025 Initial treatment and report of accident. It is the responsibility of the worker to notify the practitioner when the worker has reason to believe his injury or condition is industrial in nature. Conversely, if the attending doctor discovers a condition which he believes to be work related or has reason to believe an injury is work related, he must so notify the worker. Once such determination is made by either the claimant or the attending doctor, a report of accident must be filed.

Failure to comply with this responsibility can result in penalties as outlined in WAC 296–20–02001.

It is the practitioner's responsibility to ascertain whether he is the first attending practitioner. If so, he will take the following action:

(1) Give emergency treatment.

(2) Immediately complete and forward the report of accident, to the department and the employer or self–insurer. Instruct and give assistance to the injured worker in completing his portion of the report of accident. In filing a claim, the following information is necessary so there is no delay in adjudication of the claim or payment of compensation.

(a) Complete history of the industrial accident or exposure.

(b) Complete listing of positive physical findings.

(c) Specific diagnosis with ICD–9–CM code(s) and narrative definition relating to the injury.

(d) Type of treatment rendered.

(e) Known medical, emotional or social conditions which may influence recovery or cause complications.

(f) Estimate time loss due to the injury.

(3) If the patient remains under his care continue with necessary treatment in accordance with medical aid rules. If the practitioner is *not* the original attending doctor, he should question the injured worker to determine whether a report of accident has been filed for the injury or condition. If no report of accident has been filed, it should be completed immediately and forwarded to the department or self–insurer, as the case may be, with information as to the name and address of original practitioner if known, so that he/she may be contacted for information if necessary.

If a report of accident has been filed, it is necessary to have the worker complete a request for transfer as outlined in WAC 296–20–065, if the worker and practitioner agree that a change in attending doctor is desirable.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–025, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–025, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–025, filed 6/1/71; Order 70–12, § 296–20–025, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–025, filed 11/27/68, effective 1/1/69.]

WAC 296–20–030 Treatment not requiring authorization for accepted conditions. (1) A maximum of twenty office calls for the treatment of the industrial condition, during the first sixty days, following injury. Subsequent office calls must be authorized. Reports of treatment rendered must be filed at sixty day intervals to include number of office visits to date. See WAC 296–20–03001 for report requirements and further information.

(2) Initial diagnostic x–rays necessary for evaluation and treatment of the industrial injury or condition. See WAC 296–20–121 for further information.

(3) The first twelve physical therapy treatments as provided by WAC 296–23–710 and 296–21–095, upon consultation by the attending doctor or under his direct supervision. Additional physical therapy treatment must be authorized and the request substantiated by evidence of improvement. In no case will the department or self–insurer pay for inpatient hospitalization of a claimant to receive physical therapy treatment only. USE OF DIAPULSE, THERMATIC (standard model only), SPECTROWAVE AND SUPERPULSE MACHINES AND IONTOPHORESIS IS NOT AUTHORIZED FOR WORKERS ENTITLED TO BENEFITS UNDER THE INDUSTRIAL INSURANCE ACT.

(4) Routine laboratory studies reasonably necessary for diagnosis and/or treatment of the industrial condition. Other special laboratory studies require authorization.

(5) Routine standard treatment measures rendered on an emergency basis or in connection with minor injuries not otherwise requiring authorization.

(6) Consultation with specialist when indicated. See WAC 296-20-051 for consultation guidelines.

(7) Nonscheduled drugs and medications during the acute phase of treatment for the industrial injury or condition.

(8) Scheduled drugs and other medications known to be addictive, habit forming or dependency inducing may be prescribed in quantities sufficient for treatment for a maximum of twenty-one days. If drug therapy extends beyond thirty days, see WAC 296-20-03003 regarding management.

(9) Injectable scheduled and other drugs known to be addictive, habit forming, or dependency inducing may be provided only on an in-patient basis. Hospital admission for administration of drugs for relief of chronic pain only will not be allowed.

(10) Diagnostic or therapeutic nerve blocks. See WAC 296-20-03001 for restrictions.

(11) Intra-articular injections. See WAC 296-20-03001 for restrictions.

(12) Myelogram if prior to emergency surgery.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-030, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-030, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-030, filed 1/30/74; Order 71-6, § 296-20-030, filed 6/1/71; Order 70-12, § 296-20-030, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-030, filed 11/27/68, effective 1/1/69.]

WAC 296-20-03001 Treatment requiring authorization. Certain treatment procedures require authorization by the department or self-insurer. Requests for authorization must include a statement of: The condition(s) diagnosed; ICD-9-CM codes; their relationship, if any, to the industrial injury/exposure; an outline of the proposed treatment program, its length and components, procedure codes, and expected prognosis; and an estimate of when treatment would be concluded and condition stable.

(1) Office calls in excess of the first twenty visits or sixty days whichever occurs first.

(2) All nonemergent major surgery must be authorized prior to surgery date. Some surgical procedures require concurring opinions prior to authorization. (See WAC 296-20-045 for details.)

(3) X-ray and radium therapy.

(4) Diagnostic studies other than routine x-ray and blood or urinalysis laboratory studies.

(5) Myelogram and discogram in nonemergent cases.

(6) Physical therapy treatment beyond initial twelve treatments as outlined in WAC 296-21-095 and 296-23-710.

(7) Diagnostic or therapeutic injection. Epidural or caudal injection of substances other than anesthetic or contrast solution will be authorized under the following conditions only:

(a) When the worker has experienced acute low back pain or acute exacerbation of chronic low back pain of no more than six months duration.

(b) The worker will receive no more than three injections in an initial thirty-day treatment period, followed by a thirty-day evaluation period. If significant pain relief is demonstrated one additional series of three injections will be authorized. No more than six injections will be authorized per acute episode.

(8) Home nursing or convalescent center care must be authorized per provision outlined in WAC 296-20-091.

(9) Provision of prosthetics, orthotics, surgical appliances, special equipment for home or transportation vehicle; custom made shoes for ankle/foot injuries resulting in permanent deformity or malfunction of a foot; TNS units; masking devices; hearing aids; etc., must be authorized in advance as per WAC 296-20-1101 and 296-20-1102.

(10) Biofeedback program; pain clinic; weight loss program; psychotherapy; rehabilitation programs; and other programs designed to treat special problems must be authorized in advance. See WAC 296-21-0501 and 296-20-0502 for details.

(11) Prescription or injection of vitamins for specific therapeutic treatment of the industrial condition(s) when the attending doctor can demonstrate that published clinical studies indicate vitamin therapy is the treatment of choice for the condition. Authorization for this treatment will require presentation of facts to and review by department medical consultant.

(12) Injections of anesthetic and/or antiinflammatory agents into the vertebral facet joints will be authorized to qualified specialists in orthopedics, neurology, and anesthesia, or other physicians who can demonstrate expertise in the procedure, AND who can provide certification their hospital privileges include the procedure requested under the following conditions:

(a) Rationale for procedure, treatment plan, and request for authorization must be presented in writing to the department or self-insurer.

(b) Procedure must be performed in an accredited hospital under radiographic control.

(c) Not more than four facet injection procedures will be authorized in any one patient.

(13) The long term prescription of medication under the specific conditions and circumstances in (a) and (b) are considered corrective therapy rather than palliative treatment and approval in advance must be obtained.

(a) Nonsteroidal antiinflammatory agents for the treatment of degenerative joint conditions aggravated by occupational injury.

(b) Anticonvulsive agents for the treatment of seizure disorders caused by trauma.

(14) Intra-muscular and trigger point injections of steroids and other nonscheduled medications are limited to three injections per patient. The attending doctor must submit justification for an additional three injections if indicated with a maximum of six injections to be authorized for any one patient.

(15) The department may designate those diagnostic and surgical procedures which can be performed in other

than a hospital inpatient setting. Where a worker has a medical condition which necessitates a hospital admission, prior approval of the department or self-insurer must be obtained.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-20-03001, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-20-03001, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-03001, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03001, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03001, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-03001, filed 11/30/79, effective 1/1/80; Order 76-34, § 296-20-03001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03002 Treatment not authorized. The department or self-insurer will not allow nor pay for following treatment:

(1) USE OF DIAPULSE, THERMATIC (standard model only), SPECTROWAVE AND SUPERPULSE MACHINES ON WORKERS ENTITLED TO BENEFITS UNDER THE INDUSTRIAL INSURANCE ACT.

(2) Iontophoresis; prolotherapy; acupuncture; injections of colchicine; injections of fibrosing or sclerosing agents; and injections of substances other than anesthetic or contrast into the subarachnoid space (intra-thecal injections).

(3) Treatment to improve or maintain general health (i.e., prescriptions and/or injection of vitamins or referrals to special programs such as health spas, swim programs, exercise programs, athletic-fitness clubs, diet programs, social counseling).

(4) Continued treatment beyond stabilization of the industrial condition(s), i.e., maintenance care, except where necessary to monitor prescription of medication necessary to maintain stabilization i.e., anti-convulsive, anti-spasmodic, etc.

(5) After consultation and advice to the department or self-insurer, any treatment measure deemed to be dangerous or inappropriate for the injured worker in question.

(6) Treatment measures of an unusual, controversial, obsolete, or experimental nature (see WAC 296-20-045). Under certain conditions, treatment in this category may be approved by the department or self-insurer. Approval must be obtained prior to treatment. Requests must contain a description of the treatment, reason for the request with benefits and results expected.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-03002, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-20-03002, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-03002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-03002, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-20-03002, filed 11/24/76, effective 1/1/77.]

WAC 296-20-03003 Drugs and medication. (1) GENERAL PRINCIPLES. There has been a significant increase in the incidence of drug dependence in workers covered under the industrial insurance program of this state. The industrial insurance committee of the Washington state medical association has recommended that the medical aid rules should contain reasonable and appropriate guidelines for the prescription of controlled substances, psychotropics, and injectables with the intent to improve prescribing practices and the general level of medical care for claimants.

The physician's record should include the reason for the medication, the dosage and the amount prescribed. With repeated prescriptions, the record should make clear the plan and the need for continuing medication.

Because of the dangers inherent in prescriptions for large amounts of psychotropic drugs, the following rules will set forth guidelines for the prescription of psychotropic drugs and benzodiazepines.

(2) COVERAGE. Prescriptions are to be written only for injuries and diseases accepted under the claim.

(3) INITIAL RX-ALL MEDICATION. Initial prescription of medication shall be for quantities sufficient for twenty-one days or less. Refills shall be in accordance with the physician's treatment plan and the additional rules which follow.

(4) OTC DRUGS OVER-THE-COUNTER. Prescriptions for the over-the-counter items may be paid. Special compounding fees for over-the-counter items are not payable.

(5) PENSION CASES. The industrial insurance statute prohibits department or self-insurer payment for controlled substances for claimants on pension. Payment for other medications for pensioners is dependent upon a special order on the individual claim.

(6) CONTROLLED SUBSTANCES AND OTHER ANALGESICS. Prescriptions for controlled substances may not be for quantities for more than twenty-one days. Refills of prescriptions for controlled substances will be contingent upon the attending physician's reevaluation of the claimant. Directions should be on time contingent rather than a PRN basis.

Schedule II substances and other analgesics (including but not limited to Stadol, Nubaine, etc.), may be used to relieve pain during hospitalization and the acute stage of an injury or illness. The prescription of the above beyond reasonable recovery periods, or for chronic pain, pain behavior or suffering is prohibited. Injectable narcotics or analgesics are not permitted or paid in the outpatient setting except an emergency basis.

(7) METHADONE FOR NARCOTIC MAINTENANCE OR WITHDRAWAL. Prescriptions for Methadone or "pain cocktails" containing Methadone for narcotic addiction, maintenance or detoxification are prohibited by Federal Public Law 93-281. Methadone for withdrawal purposes may be dispensed only by agencies licensed by the drug enforcement administration. Those agencies in the state of Washington are:

Veteran's Administration Hospital (Seattle);
Evergreen Treatment Center (Seattle);
Center for Addiction Services (Seattle);
Therapeutic Health Services (Seattle);
Tacoma Pierce County Health Service (Tacoma);
Mid-Columbia Mental Health (Pasco);
Central Washington Mental Health (Yakima); and
Youth Help Association (Spokane).

The department is required to notify the drug enforcement administration when Methadone is prescribed for detoxification purposes by persons other than agencies licensed by the drug enforcement administration.

(8) NONSTEROIDAL ANTI-INFLAMMATORY AGENTS. Prescriptions for anti-inflammatory agents are exempt from the rule prohibiting palliative treatment. Nonsteroidal anti-inflammatory agents may be prescribed if high dose enteric coated aspirin trial is unsuccessful.

Prescriptions for ulcer medications such as H_2 blockers (Tagamet and Zantac) and ulcer adherent complexes (Carafate) written on a prophylactic basis in connection with prescriptions for analgesic, anti-inflammatory, and steroidal agents may be allowed when:

(a) Peptic ulcer disease has been documented; or

(b) Intensive treatment with steroidal agents is being utilized; or

(c) The physician certifies that prescription with meals or with an alternative NSAID (nonsteroidal anti-inflammatory drug) has failed to control the abdominal distress.

(9) SEDATIVES. Sedatives including but not limited to short acting barbiturates such as Seconal or Nembutal, and nonbarbiturate sedatives such as Noctec and Dalmane are prohibited and will not be paid during the chronic stage of any occupational injury or illness. Doriden (Glutethimide) and Quaalude (Methaqualone) are prohibited and will not be paid at any time.

(10) ANTICONVULSANTS FOR CHRONIC PAIN. Anticonvulsants including but not limited to Dilantin and Tegretol, may be prescribed on a trial basis for chronic pain if all of the precautions regarding their use are observed. Long-term prescription of anticonvulsants may be allowed if concurring opinion is obtained from a physician with special training in the pain field.

(11) PSYCHOTROPICS. Because of the dangers inherent, prescriptions for psychotropic drugs such as Phenothiazines, butyrophenones, tri-or-quadricyclic antidepressants must be in compliance with published indications, contraindications, precautions, and warnings. Prescriptions should not exceed a lethal dose (for example maximum of one hundred 50 mg. tablets of Amitriptyline (Elavil)).

(12) BENZODIAZEPIES. Prescriptions for Benzodiazepies including but not limited to Valium, Tranxene, Serax, Librium, etc., are limited to the following types of patients: Hospitalized patients, claimants with accepted psychiatric disorders, and to outpatients for not more than twenty-one days.

(13) RX FOR NONRELATED. The department or self-insurer may consider temporary coverage of conditions not related to the industrial injury when such conditions are retarding recovery. However, prescriptions for treatment of such conditions must have prior authorization per WAC 296-20-055.

(14) INJECTABLES. Prescriptions for injectable narcotics, sedatives, analgesics, antihistamines, tranquilizers, psychotropics, vitamins, minerals, food supplements, and hormones (except Insulin and Heparin) are not covered. Such drugs may be administered for inpatients or during emergency treatment of a life-threatening condition/injury or during outpatient treatment of burns or fractures when needed for dressing or cast changes. They may not be administered for chronic pain. Prescriptions for syringes and needles are prohibited and will not be paid except for Insulin and Heparin.

(15) GENERIC DRUGS. Prescriptions are to be written for generic drugs only unless the patient cannot tolerate substitution. Pharmacists are instructed to fill with generic drugs unless the attending physician specifically indicates substitution is not permitted.

(16) PROVIDER NUMBER. Prescriptions for department claims must include the department assigned provider account number of the prescribing physician and legible physician signature.

(17) The department realizes that management of chronic pain cases is most difficult subjecting the physician to extreme pressures. With this in mind, the following guidelines are suggested with the intent that they will help the doctor cope with the pressures and assist in the management of these difficult cases:

(a) Keep a drug summary on all claimants.

(b) Determine if pain complaints are consistent with the amount of injury.

(c) Write specific instructions for the use of sedatives and analgesics.

(d) Treat the natural depression in injured workers properly, avoiding tranquilizers, and sedatives which increase depression.

(e) Evaluate recovery time frequently, and allow patient to regain self-esteem by returning to work.

(f) If a patient is requiring these drugs in amounts sufficient to cause concern about habituation or addiction or for longer than sixty days, the attending physician should:

(i) Revise the treatment plan and withdraw the drugs.

(ii) If unable to treat addiction or habituation himself, refer the patient to a physician or an institution experienced in drug withdrawal.

(iii) If (i) and (ii) are not acceptable or appropriate, obtain unbiased concurring opinion, and justify an alternate course in writing to the department of labor and industries or self-insurer and the Federal Drug Enforcement Administration.

(18) The department or self-insurer will inform the attending physician when it is concerned about the amount of these drugs the patient is receiving and will provide information regarding physicians and institutions experienced in drug withdrawal.

(19) As per RCW 51.36.010, when a worker is placed on pension the department cannot pay for Schedule I, II, III or IV substances.

(20) Physician failure to reduce or terminate prescription of controlled substances, habit forming or addicting medications, or dependency inducing medications, after department or self-insurer request to do so for an injured worker may result in a transfer of the worker to another physician of the worker's choice. Refusal of the worker to select another doctor can result in department or self-insurer selection of new attending doctor. (See WAC 296-20-065 regarding transfer.)

(21) Should the attending doctor or the injured worker refuse to comply with the department or self–insurer request to discontinue certain medications, the department or self–insurer, after providing adequate prior notice to the worker, doctor, and pharmacy/s involved, may discontinue payment for the medication.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–03003, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–20–03003, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–03003, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–03003, filed 12/23/80, effective 3/1/81; Order 77–27, § 296–20–03003, filed 11/30/77, effective 1/1/78; Order 76–34, § 296–20–03003, filed 11/24/76, effective 1/1/77.]

WAC 296–20–03004 Chemonucleolysis. Chymopapain injections may be authorized in the treatment of lumbar disc disease under the following limitations and criteria:

(1) Only physicians (a) who routinely care for patients with herniated lumbar intervertebral discs, (b) who are qualified by training and experience to diagnose lumbar disc disease and to perform laminectomy, discectomy or other spinal procedures, (c) who have received specialized training in chemonucleolysis, may administer the procedure for industrial injured workers covered under state industrial insurance fund or self–insurance.

(2) Preadministration work–up shall include but is not limited to (a) a concurring opinion from a physician familiar with the procedure and qualified by training and experience to diagnose and treat lumbar disc disease, (b) diagnostic studies indicative of level of disc herniation i.e., myelogram, a high resolution CT scan, discogram, etc., (c) other diagnostic studies including sedimentation rate (anaphylaxis has occurred primarily in females with sedimentation rates in excess of 20 mm per hour) as indicated for the individual patient.

(3) Procedure will be authorized (a) one time only in the treatment life of any given patient, (b) maximum of two levels per patient (Generally only one level will be authorized. Indications for a second level are infrequent. However, authorization may be granted if diagnostic studies and/or concurring opinion so indicates.), (c) only for patients who have had no previous lumbar surgery at that level.

(4) Procedure must be carried out in hospital setting under radiographic or fluoroscopic control, with a permanent x–ray record maintained.

(5) PRIOR AUTHORIZATION FROM THE DEPARTMENT OR THE SELF–INSURER MUST BE OBTAINED BEFORE PROCEDURE IS SCHEDULED.

(6) These rules were formulated based upon the recommendations of the Federal Food and Drug Administration, the drug manufacturer, and the industrial insurance committee of the Washington state medical association.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–20–03004, filed 8/2/83.]

WAC 296–20–03005 Inoculation or immunological treatment for exposure to infectious occupational disease. Authorization for inoculation or other immunological treatment for occupational disease shall be given only in cases in which a work related activity has resulted in probable exposure of the worker to a potential infectious occupational disease. In no case shall such inoculation or immunological treatment be authorized until such time as a work related activity has resulted in such probable exposure. Inoculation or other treatment required as a condition for employment or otherwise obtained prior to the worker's performing a work related activity resulting in probable exposure to an occupational disease shall not be authorized. For purposes of this section, probable exposure is an incident which gives rise to a clear and immediate likelihood of contracting an occupational disease process.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.36.010. 86–18–025 (Order 86–34), § 296–20–03005, filed 8/27/86, effective 11/1/86.]

WAC 296–20–035 Treatment in cases that remain open beyond sixty days. Conditions requiring treatment beyond sixty days are indicative of a major industrial condition or complication by other conditions. Except in cases of severe and extensive injuries, i.e., quadriplegia, paraplegia, multiple fractures, etc., when the injured worker requires treatment beyond sixty days following injury, a complete examination is necessary to determine and/or establish need for continued treatment and/or payment of time loss compensation. This may be accomplished either by the attending doctor or a consultation exam. In either case, a detailed exam report must be provided to the department or self–insurer. The following information is required. Additional information may be included or requested.

(1) Attending doctor report.

(a) The condition(s) diagnosed including ICD–9–CM codes and the objective and subjective findings.

(b) Their relationship, if any, to the industrial injury or exposure.

(c) Outline of proposed treatment program, its length, components, and expected prognosis including an estimate of when treatment should be concluded and condition(s) stable. An estimated return to work date should be included. The probability, if any, of permanent partial disability resulting from industrial conditions should be noted.

(d) If the worker has not returned to work, the attending doctor should indicate whether he feels vocational assessment will be necessary to evaluate the worker's ability to return to work and why.

(e) If the claimant has not returned to work, a physical capacities evaluation should be included with the report. The physical capacities evaluation may be completed by an occupational therapist or a registered physical therapist.

(2) Consultation exam.

(a) A DETAILED HISTORY TO ESTABLISH:

(i) The type and severity of the industrial injury or occupational disease.

(ii) The patient's previous physical and mental health.

(iii) Any social and emotional factors which may effect recovery.

(b) A COMPARISON HISTORY between history provided by attending doctor and injured worker, must be provided with exam.

(c) A DETAILED PHYSICAL EXAMINATION concerning all systems affected by the industrial accident.

(d) A GENERAL PHYSICAL EXAMINATION sufficient to demonstrate any preexisting impairments of function or concurrent condition.

(e) A COMPLETE DIAGNOSIS OF ALL PATHOLOGICAL CONDITIONS INCLUDING ICD-9-CM CODES FOUND TO BE LISTED:

(i) Due solely to injury.

(ii) Preexisting condition aggravated by the injury and the extent of aggravation.

(iii) Other medical conditions neither related to nor aggravated by the injury but which may retard recovery.

(iv) Coexisting disease (arthritis, congenital deformities, heart disease, etc.).

(f) CONCLUSIONS MUST INCLUDE:

(i) Type treatment recommended for each pathological condition and the probable duration of treatment.

(ii) Expected degree of recovery from the industrial condition.

(iii) Probability, if any, of permanent disability resulting from the industrial condition.

(iv) Probability of returning to work.

(g) REPORTS OF NECESSARY, REASONABLE X-RAY AND LABORATORY STUDIES TO establish or confirm the diagnosis when indicated.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-035, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-035, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-035, filed 6/1/71; Order 70-12, § 296-20-035, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-035, filed 11/27/68, effective 1/1/69.]

WAC 296-20-045 Procedures requiring consultation. In the event of complication, controversy, or dispute over the treatment aspects of any claim, the department or self-insurer will not authorize treatment until the attending doctor has arranged a consultation with a qualified doctor with experience and expertise on the subject, and the department or self-insurer has received notification of the findings and recommendations of the consultant.

This consultation must be arranged in accordance with WAC 296-20-051.

Consultations are also required in the following situations:

(1) All nonemergent neck and back surgery.

(2) All repeat nonemergent major surgery, except inguinal hernia.

(3) All nonemergent major surgery on a patient with serious medical, emotional or social problems which are likely to complicate recovery.

(4) All procedures of a controversial nature or type not in common use for the specific condition.

(5) Surgical cases where there are complications or unfavorable circumstances such as age, preexisting conditions or interference with occupational requirements, etc.

(6) Conservative or chiropractic care extending past one hundred twenty days following initial visit. Such consultation may be with a chiropractic or a medical consultant.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-045, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-045, filed 11/30/79, effective 1/1/80; Order 71-6, § 296-20-045, filed 6/1/71; Order 70-12, § 296-20-045, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-045, filed 11/27/68, effective 1/1/69.]

WAC 296-20-051 Consultations. In cases presenting diagnostic or therapeutic problems to the attending doctor, consultation with a specialist will be allowed without prior authorization. The consultant must submit his findings and recommendations immediately to the attending doctor and the department or self-insurer. See WAC 296-20-035 for report content requirements.

Whenever possible, the referring doctor should make his x-rays and records available to the consultant to avoid unnecessary duplication. The department's consultation referral form may be used to convey information to the consultant. Consultants may proceed with indicated and reasonable x-rays or laboratory work and reasonable diagnostic studies as permitted within their scope of practice.

Consultations will be held with a specialist within a reasonable geographic area. Whenever possible, consultation should be made with a doctor outside the referring doctor's office or partnership.

The attending doctor will not arrange a consultation if he has received notification that a special or commission examination is being arranged by the department or self-insurer. If he has had recent consultation and is notified that the department or self-insurer is arranging an examination, he must immediately advise the department or self-insurer of the consultation.

The consultation fee will be paid only if a consultation report is complete and contains all pathological findings as well as all pertinent negative or normal findings. The report must be received in the department within fifteen days from the date of the consultation. No fee is paid to the consultant if the worker fails the appointment.

The consultant may not order, prescribe, or provide treatment without the approval of the attending doctor and the injured worker. No transfer will be made to the consultant without the prior approval of the attending doctor and the injured worker.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-051, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-051, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-051, filed 6/1/71; Order 70-12, § 296-20-051, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-070.]

WAC 296-20-055 Limitation of treatment and temporary treatment of unrelated conditions when retarding

recovery. Conditions preexisting the injury or occupational disease are not the responsibility of the department. When an unrelated condition is being treated concurrently with the industrial condition, the attending doctor must notify the department or self-insurer immediately and submit the following:

(1) Diagnosis and/or nature of unrelated condition.

(2) Treatment being rendered.

(3) The effect, if any, on industrial condition.

Temporary treatment of an unrelated condition may be allowed, upon prior approval by the department or self-insurer, provided these conditions directly retard recovery of the accepted condition. The department or self-insurer will not approve or pay for treatment for a known preexisting unrelated condition for which the claimant was receiving treatment prior to his industrial injury or occupational disease, which is not retarding recovery of his industrial condition.

A thorough explanation of how the unrelated condition is affecting the industrial condition must be included with the request for authorization.

The department or self-insurer will not pay for treatment of an unrelated condition when it no longer exerts any influence upon the accepted industrial condition. When treatment of an unrelated condition is being rendered, reports must be submitted monthly outlining the effect of treatment on both the unrelated and the accepted industrial conditions.

THE DEPARTMENT OR SELF-INSURER WILL NOT PAY FOR TREATMENT FOR UNRELATED CONDITIONS UNLESS SPECIFICALLY AUTHORIZED. This includes prescription of drugs and medicines.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-055, filed 12/23/80, effective 3/1/81; Order 71-6, § 296-20-055, filed 6/1/71; Order 70-12, § 296-20-055, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-055, filed 11/27/68, effective 1/1/69.]

WAC 296-20-06101 Reporting requirements. The department or self-insurer does require several kinds of reports at various stages of the claim in order to authorize treatment, time loss compensation, and treatment bills.

INITIAL REPORT OF ACCIDENT: The first report required is the report of accident. The report of accident qualifies as the office note or report of the initial visit for brief or limited office calls. In addition to the office call charge, the doctor may bill code 90001 for the filing of the accident report. Reimbursement of these services will be paid if the claim is allowed by the department or self-insurer. If the initial visit is a transfer case, a report is required. Billing for an extended or comprehensive initial visit may require submission of additional reports.

OFFICE NOTES: Legible copies of office or progress notes are required for all follow-up visits. Office notes are not acceptable in lieu of requested narrative reports.

SIXTY-DAY NARRATIVE REPORTS: When conservative treatment is to continue beyond sixty days, submission of a narrative report is required to substantiate the need for continued care. A narrative report must contain basic information contained in WAC 296-20-035. For this narrative report, the department or self-insurer will pay 16.0 units for a routine report in addition to a routine office call if the call is needed to provide the information. If the doctor supplies additional comprehensive information in the report, payment of a charge submitted in excess of 16.0 units will be considered. In most cases, payment for a narrative report in addition to an extended or comprehensive office visit will not be considered as the fee for those services includes a comprehensive report. A narrative report should be billed under code 99080 and described as a "sixty-day report."

CONSULTATIONS REPORTS: Following one hundred twenty days of conservative care (nonsurgical cases), a consultation with the doctor of the attending doctor's choice is required to substantiate further treatment authorization. No prior authorization is required for such consultations. The department or self-insurer should be notified via a consultation referral form (LI-210-299). The consultant is responsible for submitting a copy of his report as outlined in WAC 296-20-035 and 296-20-051 with his bill to the department or self-insurer.

FOLLOW-UP REPORTS: Following the one-hundred twenty day consultation, narrative reports are required at sixty-day intervals as outlined in WAC 296-20-035. The department or self-insurer will request additional consultations and/or special exams as warranted by the individual case.

HOSPITAL REPORTS: When injured workers are hospitalized it is the responsibility of the doctor to submit his reports to the hospital for submission with the hospital billing. The doctor may bill for hospital visits without attaching copies of the reports. However, billing for operative procedures requires a copy of the operative report.

REOPENING APPLICATION: On claims closed over sixty days, the department or self-insurer will pay for completion of a reopening application (Code 90097), an office visit and diagnostic studies necessary to complete the application. (See WAC 296-20-097.) NO OTHER BENEFITS WILL BE PAID UNTIL THE ADJUDICATION DECISION IS RENDERED.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-06101, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-06101, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-20-06101, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-20-06101, filed 11/22/74, effective 1/1/75.]

WAC 296-20-065 Transfer of doctors. All transfers from one doctor to another must be approved by the department or self-insurer. Normally transfers will be allowed only after the worker has been under the care of the attending doctor for sufficient time for the doctor to: Complete necessary diagnostic studies, establish an appropriate treatment regimen, and evaluate the efficacy of the therapeutic program.

Under RCW 51.36.010 the injured worker is entitled to free choice of treating doctor. Except as provided under subsections (1) through (7) of this section, no reasonable request for transfer will be denied. The injured

worker must be advised when and why a transfer is denied.

When a transfer is approved, the new attending doctor must be provided with a copy of the worker's treatment record by the previous attending doctor. X-rays in the possession of the previous attending doctor must be immediately forwarded to the new attending doctor for his or her retention as long as the worker remains under his or her care. Copies of x-rays and other records may be provided in lieu of originals. Code 99083 may be used to bill for reproducing records.

The department or self-insurer reserves the right to require a worker to select another doctor or specialist for treatment, under the following conditions:

(1) When more conveniently located doctors, qualified to provide the necessary treatment, are available.

(2) When the attending doctor fails to cooperate in observance and compliance with the department rules.

(3) In time loss cases where reasonable progress towards return to work is not shown.

(4) Cases requiring specialized treatment, which the attending doctor is not qualified to render, or is outside the scope of the attending doctor's license to practice.

(5) Where the department or self-insurer finds a transfer of doctor to be appropriate and has requested the worker to transfer in accordance with this rule, the department or self-insurer may select a new attending doctor if the worker unreasonably refuses or delays in selecting another attending doctor.

(6) In cases where the attending doctor is not qualified to treat each of several accepted conditions. This does not preclude concurrent care where indicated. See WAC 296-20-071.

(7) No transfer will be approved to a consultant or special examiner without the approval of the attending doctor and the worker.

Transfers will be authorized for the foregoing reasons or where the department or self-insurer in its discretion finds that a transfer is in the best interest of returning the injured worker to a productive role in society.

When a flat fee case is transferred to another doctor it is the responsibility of the two doctors involved to determine the proper apportionment of the total fee for the flat fee procedure. It shall be the responsibility of the operating doctor to advise the department or self-insurer of the proportion of the postoperative care provided by each doctor and the fee distribution. Each doctor must submit a separate bill to the department or self-insurer for his portion of the care. No payment will be made until this apportionment has been received by the department or self-insurer. If no agreement can be reached between the two doctors concerning the fee distribution, the matter will be referred to the Washington state medical association's medical advisory and utilization review committee to the department of labor and industries.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-065, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-065, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-20-065, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-20-065, filed 12/1/77; Emergency Order 77-16, § 296-20-065, filed 9/6/77; Order 75-39, § 296-20-065, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-065, filed 1/30/74; Order 71-6, § 296-20-065, filed 6/1/71; Order 70-12, § 296-20-065, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-20-065, filed 11/27/68, effective 1/1/69.]

WAC 296-20-071 Concurrent treatment. In some cases, treatment by more than one practitioner may be allowed. The department or self-insurer will consider concurrent treatment when the accepted conditions resulting from the injury involve more than one system and/or require specialty or multidisciplinary care.

When requesting consideration for concurrent treatment, the attending doctor must provide the department or self-insurer with the following:

The name, address, discipline, and specialty of all other practitioners assisting in the treatment of the injured worker and an outline of their responsibility in the case and an estimate of the length of the period of concurrent care.

When concurrent treatment is allowed, the department or self-insurer will recognize one primary attending doctor, who will be responsible for prescribing all medications; directing the over-all treatment program; providing copies of all reports and other data received from the involved practitioners and, in time loss cases, providing adequate certification evidence of the worker's inability to work.

The department or self-insurer will approve concurrent care on a case-by-case basis. Consideration will be given to all factors in the case including availability of providers in the worker's geographic location.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-071, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-071, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-20-071, filed 11/28/75, effective 1/1/76; Order 70-12, § 296-20-071, filed 12/1/70, effective 1/1/71. Formerly WAC 296-20-060.]

WAC 296-20-075 Hospitalization. Hospitalization will be paid when indicated for treatment of the accepted condition(s). Unless the worker's condition requires special care, ward or semi-private accommodations will be paid. Hospitalization solely for physical therapy, bed rest, and/or administration of injectable drugs will be paid only under the following circumstances:

(a) Acute back pain with objective findings of neurological deficit, e.g., foot drop, motor dysfunction or other symptoms indicative of a herniated disc;

(b) Chronic back pain, which has been treated for a minimum of ten days with home bed rest, traction, outpatient physical therapy, and medication without improvement and where the worker has objective physical findings.

Discharge from the hospital shall be at the earliest date possible consistent with proper health care. If transfer to a convalescent center or nursing home is indicated, prior arrangements should be made with the department or self-insurer. See WAC 296-20-091 for further information. The department may designate those diagnostic and surgical procedures which can be

performed in other than a hospital inpatient setting. Where a worker has a medical condition which necessitates a hospital admission, prior approval of the department or self–insurer must be obtained.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–20–074 (Order 86–36), § 296–20–075, filed 10/1/86, effective 11/1/86; 86–06–032 (Order 86–19), § 296–20–075, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–075, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–075, filed 6/1/71; Order 70–12, § 296–20–075, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–075, filed 11/27/68, effective 1/1/69.]

WAC 296–20–081 Unrelated concurrent nonemergent surgery. Elective surgery for an unrelated condition is not normally permitted during hospitalization for an industrial condition. Under some circumstances unrelated elective surgery may be permitted through prior agreement and approval by the department provided the unrelated surgery is not more extensive than the procedure for the industrial condition. The requesting doctor must submit a written request and identify which services are needed due to the industrial injury and which are needed due to unrelated conditions, along with an estimate of what effect, if any, the unrelated surgery will have on the accepted conditions and recovery time from surgery.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–081, filed 12/23/80, effective 3/1/81; Order 70–12, § 296–20–081, filed 12/1/70, effective 1/1/71. Formerly WAC 296–20–095.]

WAC 296–20–091 Private room--Intensive care special or home nurses. When the worker's condition is such that he requires special nurses, a private room or intensive care, the attending doctor may order these services, subject to later department or self–insurer approval of the claim without prior authorization. The department or self–insurer should be notified immediately by collect telephone.

RCW 51.32.060 provides attendant care for injured workers on total permanent disability pension when such injured worker is so "physically helpless as to be unable to care for his personal needs." However, prior to total permanent disability determination some other workers, i.e., paraplegic, quadriplegic, double amputees, multiple fractures, etc. may either temporarily or permanently require special or attendant (home nurse) care.

When the attending doctor has reason to believe such care is needed the following information must be submitted in addition to basic report requirements outlined in WAC 296–20–035:

(1) Description of special/home nurse care required to include estimated time required i.e., catheterization, 3 times per day –30 minutes; bathing, 2 times per day –one hour; toilet transfers –as needed; dressing change, 4 times per day –two hours.

(2) Skill level or special training required to administer care –i.e., RN; LPN; family member who has received special training; no special training required.

(3) If known, name and address of person willing to provide care.

(4) Length of time special/home nurse care will be required.

Approval of fees for home nurse/attendant care is negotiable based upon care provided, and level of training of provider.

In addition, the department or self–insurer may authorize and pay for visiting nurse care necessary for evaluation or instruction of home health care provider.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–091, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–091, filed 6/1/71; Order 70–12, § 296–20–091, filed 12/1/70, effective 1/1/71. Formerly WAC 296–20–080.]

WAC 296–20–097 Reopenings. When a claim has been closed by department or self–insurer by written order and notice for sixty days, submission of a formal "application to reopen claim for aggravation of condition" form (LI 210–79) is necessary. Exam and diagnostic studies associated with the reopening application will be paid by the department or self–insurer regardless of department or self–insurer action on the application. NO OTHER BENEFITS WILL BE PAID UNTIL ADJUDICATION DECISION IS RENDERED. Reopening applications should be submitted immediately. When reopening is granted, the department or self–insurer can pay time loss and treatment benefits only for a period not to exceed sixty days *prior* to date the application is received by department or self–insurer. Necessary treatment should not be deferred pending a department or self–insurer adjudication decision. However, should reopening be denied treatment costs become the financial responsibility of the worker.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–097, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–097, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–097, filed 6/1/71; Order 70–12, § 296–20–095 (codified as WAC 296–20–097), filed 12/1/70, effective 1/1/71. Formerly WAC 296–20–090.]

WAC 296–20–09701 Request for reconsideration. On occasion, a claim may be closed prematurely or in error or other adjudication action may be taken, which may seem inappropriate to the doctor or injured worker. When this occurs the attending doctor should submit immediately in writing his request for reconsideration of the adjudication action, supported by an outline of:

(1) The claimant's current condition.

(2) The treatment program being received.

(3) The prognosis of when stabilization will occur.

All requests for reconsideration must be received by the department or self–insurer within sixty days from date of the order and notice of closure. Request for reconsideration of other department or self–insurer orders or actions must be made in writing by either the doctor or the injured worker within sixty days of the date of the action or order.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–09701, filed 12/23/80, effective 3/1/81.]

WAC 296–20–100 Eye glasses and refractions. The department or self–insurer will be responsible one time

for replacement of glasses or contact lenses only to the extent of the cost of restoring damaged item to its condition at the time of the accident. This benefit applies only if the worker was wearing the glasses or contact lens when the industrial accident occurred.

If glasses are repairable and a worker determines that he/she prefers a replacement, the department or self–insurer is responsible only for the cost of the repairs and the worker is responsible for the difference between repair and replacement costs.

Refraction to replace a broken or lost lens is only payable when it is substantiated that the prescription was not available from the broken lens or any other source. If the prescription is available, and the patient needs a new refraction, he is responsible for the costs of such exam.

If a refractive error is the result of the industrial injury or occupational disease condition, refraction and glasses or contact lenses will be authorized and paid by the department or self–insurer.

When broken or lost glasses or contact lenses are the only injury or condition suffered, the doctor's portion of the report of accident can be completed by an optometrist or other vendor furnishing the replacement. A report of accident must be received by the department or self–insurer in order to adjudicate the claim.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–100, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–100, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–100, filed 6/1/71; Order 70–12, § 296–20–100, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–100, filed 11/27/68, effective 1/1/69.]

WAC 296–20–110 Dental. Only dentists, oral surgeons or dental specialists licensed in the state in which they practice are eligible to treat injured workers entitled to benefits under the industrial insurance law.

If only a dental injury is involved, the doctor's portion of the report of accident must be completed by the dentist to whom the worker first reports. See WAC 296–20–025 for further information.

If the accident report has been submitted by another doctor, the dentist's report should be made by letter. In addition to the information required under WAC 296–20–025, the dentist should outline the extent of the dental injury and the treatment program necessary to repair damage due to the injury. Dental x–rays should be retained by the attending dentist for a period of not less than ten years. The department or self–insurer does not require submission of the actual films except upon specific request.

The department or self–insurer is responsible only for repair or replacement of teeth injured or dentures broken as a result of an industrial accident. Any dental work needed due to underlying conditions unrelated to the industrial injury is the responsibility of the worker. It is the responsibility of the dentist to advise the worker accordingly.

In cases presenting complication, controversy, or diagnostic or therapeutic problems, consultation by another dentist may be requested to support authorization for restorative repairs.

Bills covering the cost of dentures should be submitted for the denture only and should not include the cost for subsequent relining. If relining becomes necessary, authorization for relining must be obtained in advance from the department or self–insurer.

Bills must be submitted to the department or self–insurer within ninety days from the date the service is rendered. Bills must itemize the service rendered, including standard American Dental Association procedure codes, the materials used and the injured tooth number(s). See WAC 296–20–125 for further billing instructions.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–110, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–110, filed 12/23/80, effective 3/1/81; Order 70–12, § 296–20–110, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–110, filed 11/27/68, effective 1/1/69.]

WAC 296–20–1101 Hearing aids and masking devices. The department or self–insurer is responsible for replacement or repair of hearing aids damaged or lost due to an industrial accident only to the extent of restoring the damaged item to its condition at time of the accident. If the hearing aid is repairable and the worker determines he prefers replacement, the department or self–insurer is responsible only to the extent of the cost to repair the original and the worker is responsible for the difference between repair and replacement costs.

When the department or self–insurer has accepted a hearing loss condition either as a result of industrial injury or occupational exposure, the department or self–insurer will furnish a hearing aid (hearing aids when bilateral loss is present) when prescribed or recommended by a physician.

The department or self–insurer will bear the cost of repairs or replacement due to normal wear and the cost of battery replacement for the life of the hearing aid.

In cases of accepted tinnitus, the department or self–insurer may provide masking devices under the same provisions as outlined for hearing aids due to hearing loss.

Provision of masking devices and hearing aids require prior authorization.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–1101, filed 12/23/80, effective 3/1/81.]

WAC 296–20–1102 Special equipment rental and purchase prosthetic and orthotics equipment. The department or self–insurer will authorize and pay rental fee for equipment or devices if the need for the equipment will be for a short period of treatment during the acute phase of condition. Rental extending beyond sixty days requires prior authorization. If the equipment will be needed on long term basis, the department or self–insurer will consider purchase of the equipment or device.

The prescribing doctor must obtain prior authorization from the department or self–insurer, for rental or purchase of special equipment or devices.

The department or self–insurer will authorize and pay for prosthetics and orthotics as needed by claimant and substantiated by attending doctor. If such items are furnished by the attending doctor, the department or self–insurer will reimburse the doctor his cost for the item. In addition, a handling fee, not to exceed five percent of the wholesale cost of the item, will be paid. See WAC 296–20–124 for information regarding replacement of such items on closed claims.

The department or self–insurer will repair or replace originally provided damaged, broken, or worn–out prosthetics, orthotics, or special equipment devices upon documentation and substantiation from the attending doctor.

Provision of such equipment requires prior authorization.

THE GRAVITY GUIDING SYSTEM, GRAVITY LUMBAR REDUCTION DEVICE, BACKSWING AND OTHER INVERSION TRACTION EQUIPMENT MAY ONLY BE USED IN A SUPERVISED SETTING. RENTAL OR PURCHASE FOR HOME USE WILL NOT BE ALLOWED.

EQUIPMENT NOT REQUIRING PRIOR AUTHORIZATION INCLUDES CRUTCHES, CERVICAL COLLARS, LUMBAR AND RIB BELTS, AND OTHER COMMONLY USED ORTHOTICS OF MINIMAL COST.

PERSONAL APPLIANCES SUCH AS VIBRATORS, HEATING PADS, HOME FURNISHINGS, HOT TUBS, WATERBEDS, EXERCISE BIKES, EXERCISE EQUIPMENT, JACUZZIES, ETC. WILL NOT BE AUTHORIZED OR PAID.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–1102, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–20–1102, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–1102, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–1102, filed 12/23/80, effective 3/1/81.]

WAC 296–20–1103 Travel expense. The department or self–insurer will reimburse travel expense incurred by injured worker's for the following reasons: (1) Special exam at department's or self–insurer's request; (2) vocational evaluation at department's or self–insurer's request; (3) treatment at department rehabilitation center; (4) fitting of prosthetic device; and (5) upon *prior authorization* for treatment when injured worker must travel more than ten miles one–way from his home to the nearest point of adequate treatment. Travel expense *is not* payable when adequate treatment is available within ten miles of injured worker's home, yet the injured worker prefers to report to an attending doctor outside his home area.

Travel expense will be reimbursed at the current department established rate.

No travel expense for treatment services will be paid to those injured worker's residing outside the state of Washington. Persons residing in states which border Washington state AND within fifty miles of the Washington border will be considered Washington residents for travel expense purposes. Persons traveling from Washington to another state for diagnostic or treatment services that are not available in Washington will be reimbursed travel expense when approved in advance.

When travel involves need for food and lodging these items will be reimbursed at the currently established rates.

Parking, vehicle storage, ferry and bridge tolls will be reimbursed if receipt is provided. No receipt will be required for parking expenses under two dollars.

Request for reimbursement of travel expenses must be received by the department or self–insurer within ninety days of the date expense was incurred.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–20–1103, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–1103, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–1103, filed 12/23/80, effective 3/1/81.]

WAC 296–20–115 Flat fees. The values for procedures listed in the surgical section of the fee schedule include the surgical procedure and the "follow–up days." Necessary follow–up care beyond this period is to be added on a fee–for–service basis.

When postoperative care is to be provided by other than the operating surgeon, it shall be the responsibility of the two doctors involved to determine the appropriate apportionment of the total fee for the flat fee procedure. It shall be the responsibility of the operating surgeon to advise the department or self–insurer of the proportion of the postoperative care provided by each doctor and the fee distribution. Each doctor must submit a separate bill to the department or self–insurer for his portion of the care. No payment will be made until notice of the apportionment has been received by the department or self–insurer. In the event that no agreement can be reached concerning the distribution of the fee, the matter will be referred to the Washington state medical association's medical advisory and utilization review committee to the department of labor and industries.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–115, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–115, filed 6/1/71; Order 70–12, § 296–20–115, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–115, filed 11/27/68, effective 1/1/69.]

WAC 296–20–120 Procedures not listed in this schedule. Procedures not specifically listed will be given values comparable to those of the listed procedures of closest similarity. Codes for unlisted procedures can be found in each section. See 'BR' instructions under WAC 296–20–010 for needed billing documentation.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–120, filed 12/23/80, effective 3/1/81; Order 71–6, § 296–20–120, filed 6/1/71; Order 70–12, § 296–20–120, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–120, filed 11/27/68, effective 1/1/69.]

WAC 296–20–121 X–rays. Recognizing the greatest need for access to x–rays lies with the attending doctor, the department or self–insurer requires only submission of x–ray findings and does not require submission of the actual films except upon specific request when needed

for purposes of permanent disability rating, other administrative or legal decisions, or in litigation cases. The department or self–insurer requires the attending doctor retain x–rays for a period of not less than ten years. In transfer cases, the x–rays in the possession of the current attending doctor must be made available to the new attending doctor.

When requesting consultation, the attending doctor should make any x–rays in his possession available to the consultant.

When a special exam has been arranged for the worker by the department or self–insurer, the worker's existing x–rays should be provided to the special examiner. The worker may carry such x–rays to the exam.

When the doctor's office is closed because of death, retirement or leaving the state, arrangements must be made with the department or self–insurer regarding custody of x–rays to insure availability on request. When submitting billing for x–ray service, a copy of the x–ray findings is required. No payment will be made for excessive or unnecessary x–rays. No payment will be made on closed or rejected claims, except under conditions outlined in WAC 296–20–124.

Prior authorization is required for x–rays subsequent to the initial study. Repeat or serial radiology examinations may be performed only upon adequate clinical justification to confirm changes in the condition(s) accepted. The subjective complaints and the objective findings substantiating the repeat study must be submitted by the practitioner in the request for authorization to the department or self–insurer.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–20–121, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–121, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–121, filed 12/23/80, effective 3/1/81; Order 77–27, § 296–20–121, filed 11/30/77, effective 1/1/78; Emergency Order 77–26, § 296–20–121, filed 12/1/77; Emergency Order 77–16, § 296–20–121, filed 9/6/77; Order 74–39, § 296–20–121, filed 11/22/74, effective 1/1/75; Order 74–7, § 296–20–121, filed 1/30/74.]

WAC 296–20–124 Rejected and closed claims. (1) No payment will be made for treatment or medication on rejected claims or for services rendered after the date of claim closure.

(2) When the department or self–insurer has denied responsibility for an alleged injury or industrial condition the only services which will be paid are those which were carried out at the specific request of the department or the self–insurer and/or those examination or diagnostic services which served as a basis for the adjudication decision. Following the date of the order and notice of claim closure, the department or self–insurer will be responsible only for those services specifically requested or those examinations, and diagnostic services necessary to complete and file a reopening application.

Replacement of prosthetics, orthotics, and special equipment can be provided on closed claims after prior authorization. See WAC 296–20–1102 for further information.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–124, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–20–124, filed 11/24/76, effective 1/1/77.]

WAC 296–20–125 Billing procedures. All services rendered must be in accordance with the medical aid rules. The department or self–insurer may reject bills for services rendered in violation of these rules. The injured worker may not be billed for services rendered in violation of these rules.

(1) Bills must be itemized on department or self–insurer forms or other forms which have been approved by the department or self–insurer. Physicians, osteopaths, advanced registered nurse practitioners, chiropractors, naturopaths, podiatrists, psychologists, and registered physical therapists use the national standard HCFA 1500 health insurance claim form with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form. Hospitals use the UB–82 billing form for institution services and the national standard HCFA 1500 health insurance claim form with the bar code placed 2/10 of an inch from the top and 1 1/2 inches from the left side of the form for professional services. Pharmacies use the department's statement for pharmacy services (F–245–100). Dentists, equipment suppliers, transportation services, home health services, vocational services, and massage therapists use the department's statement for miscellaneous services (F–245–72). Providers may obtain billing forms from the department's local service locations (see Appendix C for listing).

(2) Bills must specify the date and type of service, the appropriate procedure code, the condition treated, and the charges for each service.

(3) Bills submitted to the department must be completed to include the following:

(a) Worker's name and address;

(b) Worker's claim number;

(c) Date of injury;

(d) Referring doctor's name and L & I provider account number;

(e) Area of body treated, including ICD–9–CM code(s), identification of right or left, as appropriate;

(f) Dates of service;

(g) Place of service;

(h) Type of service;

(i) Appropriate procedure code, hospital revenue code, or national drug code;

(j) Description of service;

(k) Charge;

(l) Units of service;

(m) Tooth number(s);

(n) Total bill charge;

(o) The name and address of the practitioner rendering the services and the provider account number assigned by the department;

(p) Date of billing;

(q) Submission of supporting documentation required under subsection (6) of this section.

(4) Responsibility for the completeness and accuracy of the description of services and charges billed rests

with the practitioner rendering the service, regardless of who actually completes the bill form;

(5) Vendors are urged to bill on a monthly basis. Bills must be received within ninety days of service to be considered for payment.

(6) The following supporting documentation is required when billing for services:

(a) Laboratory and pathology reports;

(b) X–ray findings;

(c) Operative reports;

(d) Office notes;

(e) Consultation reports;

(f) Special diagnostic study reports;

(g) For BR procedures – see WAC 296–20–010 for requirements; and

(h) Special or closing exam reports.

(7) The claim number must be placed on each bill and on each page of reports and other correspondence in the upper right–hand corner.

(8) Rebills. If you do not receive payment or notification from the department within ninety days, services may be rebilled. Rebills must be submitted for services denied if a claim is closed or rejected and subsequently reopened or allowed. Rebills should be identical to the original bill: Same charges, codes, and billing date. Please indicate rebill on the bill.

Any inquiries regarding adjustment of charges must be submitted within ninety days from the date of payment to be considered.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–20–074 (Order 86–36), § 296–20–125, filed 10/1/86, effective 11/1/86; 86–06–032 (Order 86–19), § 296–20–125, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–20–125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–20–125, filed 12/23/80, effective 3/1/81; Order 77–27, § 296–20–125, filed 11/30/77, effective 1/1/78; Emergency Order 77–26, § 296–20–125, filed 12/1/77; Emergency Order 77–16, § 296–20–125, filed 9/6/77; Order 75–39, § 296–20–125, filed 11/28/75, effective 1/1/76; Order 74–39, § 296–20–125, filed 11/22/74, effective 1/1/75; Order 74–7, § 296–20–125, filed 1/30/74; Order 71–6, § 296–20–125, filed 6/1/71; Order 70–12, § 296–20–125, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–20–125, filed 11/27/68, effective 1/1/69.]

WAC 296–20–12501 Physician assistant billing procedure. Billing for physician assistant services can be made only by the supervising physician. Payment will be made directly to the supervising physician. All physician assistant services must be identified by using physician assistant modifiers.

(1) Bills must be itemized on department or self–insurer forms, as the case may be, specifying: The date, type of service and the charges for each service.

(2) The bill form must be completed in detail to include the claim number. While the name of the physician's assistant rendering service must be included on the bill, all bills must be submitted under the supervising physician account number. Bills will be accepted when signed by other than the practitioner rendering services. When bills are prepared by someone else, the responsibility for the completeness and accuracy of the description of services and charges rests with the supervising physician.

(3) For a bill to be considered for payment, it must be received in the department or by the self–insurer within ninety days from the date each specific treatment and/or service was rendered or performed. Whenever possible, bills should be submitted monthly.

(4) Bills cannot be paid for services rendered while a claim is closed.

(5) The department or self–insurer may reject bills for services rendered in violation of medical aid rules.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–20–12501, filed 11/30/79, effective 1/1/80.]

WAC 296–20–12502 Physician assistant modifiers. As the scope of physician assistant treatment covers a broad area of treatment procedures, the following modifier codes are to be used after the applicable procedure code.

–01 Physician assistant performing procedure without presence of supervising physician. Bill 80% of procedure value.

–04 Physician assistant performing procedure in presence of supervising physician. Bill 80% of procedure value.

–99 Multiple modifiers: Under certain circumstances, multiple modifiers may be applicable. One or more such modifiers may be taken from another section, as applicable. For example, a physician assistant might be serving as a surgical assistant (modifier –80), assisting in performing a multiple or bilateral procedure (modifier –50). In such cases, he would add this modifier (–99) to the procedure code and briefly indicate the circumstances.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–20–12502, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–20–12502, filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79–12–086 (Order 79–18), § 296–20–12502, filed 11/30/79, effective 1/1/80.]

WAC 296–20–132 Determination of conversion factor adjustments. Effective January 1, 1984, and thereafter:

Adjustments to the conversion factors for the specialty areas of medicine, surgery, anesthesiology, radiology, and pathology may occur on January 1st of each year following prior public hearings.

Such adjustments will be based on the estimated increase/decrease in the state's average wage for the current year. The following calendar year's estimate will be adjusted to reflect the actual increase/decrease in the state's average wage for the preceding year as computed by the department of employment security and determined by RCW 50.04.355 as now or hereafter amended.

The total percentage change for any one calendar year for all five conversion factors may not exceed the total of the estimated increase/decrease in the current year, plus or minus the actual adjustment for the preceding calendar year. However, apportionment of the adjustments may be made between the various speciality areas to provide parity between the components of the fee schedule.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-20-132, filed 11/29/82, effective 1/1/84.]

WAC 296-20-135 Conversion factor table--Medicine, chiropractic, physical therapy, drugless therapeutics and nurse practitioner sections. This table is a conversion of fee schedule unit values to fees in dollar amounts at $1.18 per unit. This conversion factor is to be applied to the medicine section of the fee schedule, the chiropractic, physical therapy, drugless therapeutic and nurse practitioner sections.

Unit Value	@$1.18	Unit Value	@$1.18	Unit Value	@$1.18
.1	.11	5.0	5.90	9.9	11.68
.2	.23	5.1	6.01	10.0	11.80
.3	.35	5.2	6.13	10.5	12.39
.4	.47	5.3	6.25	11.0	12.98
.5	.59	5.4	6.37	11.5	13.57
.6	.70	5.5	6.49	12.0	14.16
.7	.82	5.6	6.60	12.5	14.75
.8	.94	5.7	6.72	13.0	15.34
.9	1.06	5.8	6.84	13.5	15.93
1.0	1.18	5.9	6.96	14.0	16.52
1.1	1.29	6.0	7.08	14.5	17.11
1.2	1.41	6.1	7.19	15.0	17.70
1.3	1.53	6.2	7.31	16.0	18.88
1.4	1.65	6.3	7.43	17.0	20.06
1.5	1.77	6.4	7.55	18.0	21.24
1.6	1.88	6.5	7.67	19.0	22.42
1.7	2.00	6.6	7.78	20.0	23.60
1.8	2.12	6.7	7.90	21.0	24.78
1.9	2.24	6.8	8.02	22.0	25.96
2.0	2.36	6.9	8.14	23.0	27.14
2.1	2.47	7.0	8.26	24.0	28.32
2.2	2.59	7.1	8.37	25.0	29.50
2.3	2.71	7.2	8.49	30.0	35.40
2.4	2.83	7.3	8.61	35.0	41.30
2.5	2.95	7.4	8.73	40.0	47.20
2.6	3.06	7.5	8.85	45.0	53.10
2.7	3.18	7.6	8.96	50.0	59.00
2.8	3.30	7.7	9.06	55.0	64.90
2.9	3.42	7.8	9.20	60.0	70.80
3.0	3.54	7.9	9.32	65.0	76.70
3.1	3.65	8.0	9.44	70.0	82.60
3.2	3.77	8.1	9.55	75.0	88.50
3.3	3.89	8.2	9.67	80.0	94.40
3.4	4.01	8.3	9.79	85.0	100.30
3.5	4.13	8.4	9.91	90.0	106.20
3.6	4.24	8.5	10.03	95.0	112.10
3.7	4.36	8.6	10.14	100.0	118.00
3.8	4.48	8.7	10.26	105.0	123.90
3.9	4.60	8.8	10.38	110.0	129.80
4.0	4.72	8.9	10.50	115.0	135.70
4.1	4.83	9.0	10.62	120.0	141.60
4.2	4.95	9.1	10.73	125.0	147.50
4.3	5.07	9.2	10.85	130.0	153.40
4.4	5.19	9.3	10.97	140.0	165.20
4.5	5.31	9.4	11.09	150.0	177.00
4.6	5.42	9.5	11.21	160.0	188.80
4.7	5.54	9.6	11.32	170.0	200.60
4.8	5.66	9.7	11.44	180.0	212.40
4.9	5.78	9.8	11.56	190.0	224.20
				200.0	236.00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-135, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-135, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-135, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-135, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-135, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-135, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-135, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-135, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-135, filed 1/30/74; Order 71-6, § 296-20-135, filed 6/1/71; Order 68-7, § 296-20-135, filed 11/27/68, effective 1/1/69.]

WAC 296-20-140 Conversion factor table--Anesthesia. This table is a conversion of fee schedule unit values to fees in dollar amounts at $17.56 per unit. This conversion factor is to be applied to the anesthesia section of the fee schedule.

Unit Value	@$17.56	Unit Value	@$17.56	Unit Value	@$17.56
.1	1.75	5.0	87.80	9.9	173.84
.2	3.51	5.1	89.55	10.0	175.60
.3	5.26	5.2	91.31	10.5	184.38
.4	7.02	5.3	93.06	11.0	193.16
.5	8.78	5.4	94.82	11.5	201.94
.6	10.53	5.5	96.58	12.0	210.72
.7	12.29	5.6	98.33	12.5	219.50
.8	14.04	5.7	100.09	13.0	228.28
.9	15.80	5.8	101.84	13.5	237.06
1.0	17.56	5.9	103.60	14.0	245.84
1.1	19.31	6.0	105.36	14.5	254.62
1.2	21.07	6.1	107.11	15.0	263.40
1.3	22.82	6.2	108.87	16.0	280.96
1.4	24.58	6.3	110.62	17.0	298.52
1.5	26.34	6.4	112.38	18.0	316.08
1.6	28.09	6.5	114.14	19.0	333.64
1.7	29.85	6.6	115.89	20.0	351.20
1.8	31.60	6.7	117.65	21.0	368.76
1.9	33.36	6.8	119.40	22.0	386.32
2.0	35.12	6.9	121.16	23.0	403.88
2.1	36.87	7.0	122.92	24.0	421.44
2.2	38.63	7.1	124.67	25.0	439.00
2.3	40.38	7.2	126.43	30.0	526.80
2.4	42.14	7.3	128.18	35.0	614.60
2.5	43.90	7.4	129.94	40.0	702.40
2.6	45.65	7.5	131.70	45.0	790.20
2.7	47.41	7.6	133.45	50.0	878.00
2.8	49.16	7.7	135.21	55.0	965.80
2.9	50.92	7.8	136.96	60.0	1,053.60
3.0	52.68	7.9	138.72	65.0	1,141.40
3.1	54.43	8.0	140.48	70.0	1,229.20
3.2	56.19	8.1	142.23	75.0	1,317.00
3.3	57.94	8.2	143.99	80.0	1,404.80
3.4	59.70	8.3	145.74	85.0	1,492.60
3.5	61.46	8.4	147.50	90.0	1,580.40
3.6	63.21	8.5	149.26	95.0	1,668.20
3.7	64.97	8.6	151.01	100.0	1,756.00
3.8	66.72	8.7	152.77	105.0	1,843.80
3.9	68.48	8.8	154.52	110.0	1,931.60
4.0	70.24	8.9	156.28	115.0	2,019.40
4.1	71.99	9.0	158.04	120.0	2,107.20
4.2	73.75	9.1	159.71	125.0	2,195.00
4.3	75.50	9.2	161.55	130.0	2,282.80
4.4	77.26	9.3	163.30	140.0	2,458.48
4.5	79.02	9.4	165.06	150.0	2,634.00
4.6	80.77	9.5	166.82	160.0	2,809.60
4.7	82.53	9.6	168.57	170.0	2,985.20
4.8	84.28	9.7	170.33	180.0	3,160.80
4.9	86.04	9.8	172.08	190.0	3,336.40
				200.0	3,512.00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-140, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-140, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-140, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-140, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-140, filed

11/30/79, effective 1/1/80; Order 77-27, § 296-20-140, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-140, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-140, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-20-140, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-20-140, filed 1/30/74.]

WAC 296-20-145 Conversion factor table--Surgery. This table is a conversion of fee schedule unit values to fees in dollar amounts at $62.11 per unit. This conversion factor applies only to the surgery section of the fee schedule.

Unit Value	@$62.11	Unit Value	@$62.11	Unit Value	@$62.11
.1	6.21	5.0	310.55	9.9	614.88
.2	12.42	5.1	316.76	10.0	621.10
.3	18.63	5.2	322.97	10.5	652.15
.4	24.84	5.3	329.18	11.0	683.21
.5	31.05	5.4	335.39	11.5	714.26
.6	37.26	5.5	341.60	12.0	745.32
.7	43.47	5.6	347.81	12.5	776.37
.8	49.68	5.7	354.02	13.0	807.43
.9	55.89	5.8	360.23	13.5	838.48
1.0	62.11	5.9	366.44	14.0	869.54
1.1	68.32	6.0	372.66	14.5	900.59
1.2	74.53	6.1	378.87	15.0	931.65
1.3	80.74	6.2	385.08	16.0	993.76
1.4	86.95	6.3	391.29	17.0	1,055.87
1.5	93.16	6.4	397.50	18.0	1,117.98
1.6	99.37	6.5	403.71	19.0	1,180.09
1.7	105.58	6.6	409.92	20.0	1,242.20
1.8	111.79	6.7	416.13	21.0	1,304.31
1.9	118.00	6.8	422.34	22.0	1,366.42
2.0	124.22	6.9	428.55	23.0	1,428.53
2.1	130.43	7.0	434.77	24.0	1,490.64
2.2	136.64	7.1	440.98	25.0	1,552.75
2.3	142.85	7.2	447.19	30.0	1,863.30
2.4	149.06	7.3	453.40	35.0	2,173.85
2.5	155.27	7.4	459.61	40.0	2,484.40
2.6	161.48	7.5	465.82	45.0	2,794.95
2.7	167.69	7.6	472.03	50.0	3,105.50
2.8	173.90	7.7	478.24	55.0	3,416.05
2.9	180.11	7.8	484.45	60.0	3,726.60
3.0	186.33	7.9	490.66	65.0	4,037.15
3.1	192.54	8.0	496.88	70.0	4,347.70
3.2	198.75	8.1	503.09	75.0	4,658.25
3.3	204.96	8.2	509.30	80.0	4,968.80
3.4	211.17	8.3	515.51	85.0	5,279.35
3.5	217.38	8.4	521.72	90.0	5,589.90
3.6	223.59	8.5	527.93	95.0	5,900.45
3.7	229.80	8.6	534.14	100.0	6,211.00
3.8	236.01	8.7	540.35	105.0	6,521.55
3.9	242.22	8.8	546.56	110.0	6,832.10
4.0	248.44	8.9	552.77	115.0	7,142.65
4.1	254.65	9.0	558.99	120.0	7,453.20
4.2	260.86	9.1	565.20	125.0	7,763.75
4.3	267.07	9.2	571.41	130.0	8,074.30
4.4	273.28	9.3	577.62	140.0	8,695.40
4.5	279.49	9.4	583.83	150.0	9,316.50
4.6	285.70	9.5	590.04	160.0	9,937.60
4.7	291.91	9.6	596.25	170.0	10,558.70
4.8	298.12	9.7	602.46	180.0	11,179.80
4.9	304.33	9.8	608.67	190.0	11,800.90
				200.0	12,422.00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-145, filed 11/30/83, effective 1/1/84; 82-24-050 (Order 82-39), § 296-20-145, filed 11/29/82, effective 7/1/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-145, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-145, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-145, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-145, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-145, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-20-145, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-145, filed 1/30/74.]

WAC 296-20-150 Conversion factor table--Radiology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $5.42 per unit. This conversion factor is to be applied only to the radiology section of the fee schedule.

Unit Value	@$5.42	Unit Value	@$5.42	Unit Value	@$5.42
.1	.54	5.0	27.10	9.9	53.65
.2	1.08	5.1	27.64	10.0	54.20
.3	1.62	5.2	28.18	10.5	56.91
.4	2.16	5.3	28.72	11.0	59.62
.5	2.71	5.4	29.26	11.5	62.33
.6	3.25	5.5	29.81	12.0	65.04
.7	3.79	5.6	30.35	12.5	67.75
.8	4.33	5.7	30.89	13.0	70.46
.9	4.87	5.8	31.43	13.5	73.17
1.0	5.42	5.9	31.97	14.0	75.88
1.1	5.96	6.0	32.52	14.5	78.59
1.2	6.50	6.1	33.06	15.0	81.30
1.3	7.04	6.2	33.60	16.0	86.72
1.4	7.58	6.3	34.14	17.0	92.14
1.5	8.13	6.4	34.68	18.0	97.55
1.6	8.67	6.5	35.23	19.0	102.98
1.7	9.21	6.6	35.77	20.0	108.40
1.8	9.75	6.7	36.31	21.0	113.82
1.9	10.29	6.8	36.85	22.0	119.24
2.0	10.84	6.9	37.39	23.0	124.66
2.1	11.38	7.0	37.94	24.0	130.08
2.2	11.92	7.1	39.48	25.0	135.50
2.3	12.46	7.2	39.02	30.0	162.60
2.4	13.00	7.3	39.56	35.0	189.70
2.5	13.55	7.4	40.10	40.0	216.80
2.6	14.09	7.5	40.65	45.0	243.90
2.7	14.63	7.6	41.19	50.0	271.00
2.8	15.17	7.7	41.73	55.0	298.10
2.9	15.71	7.8	42.27	60.0	325.20
3.0	16.26	7.9	42.81	65.0	352.30
3.1	16.80	8.0	43.36	70.0	379.40
3.2	17.34	8.1	43.90	75.0	406.50
3.3	17.88	8.2	44.44	80.0	433.60
3.4	18.42	8.3	44.98	85.0	460.70
3.5	18.97	8.4	45.52	90.0	487.80
3.6	19.51	8.5	46.07	95.0	514.90
3.7	20.05	8.6	46.61	100.0	542.00
3.8	20.59	8.7	47.15	105.0	569.10
3.9	21.13	8.8	47.69	110.0	596.20
4.0	21.68	8.9	48.23	115.0	623.30
4.1	22.22	9.0	48.78	120.0	650.40
4.2	22.76	9.1	49.32	125.0	677.50
4.3	23.30	9.2	49.86	130.0	704.60
4.4	23.84	9.3	50.40	140.0	758.80
4.5	24.39	9.4	50.94	150.0	813.00
4.6	24.93	9.5	51.49	160.0	867.20
4.7	25.47	9.6	52.03	170.0	921.40
4.8	26.01	9.7	52.57	180.0	975.60
4.9	26.55	9.8	53.11	190.0	1,029.80
				200.0	1,084.00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-150, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-150, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-150, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-150, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-150, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-150, filed 11/24/76, effective

1/1/77; Order 75-39, § 296-20-150, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-20-150, filed 1/30/74.]

WAC 296-20-155 Conversion factor table--Pathology. This table is a conversion of the fee schedule unit values to fees in dollar amounts at $.51 per unit. This conversion factor is to be applied only to the pathology section of the fee section schedule.

Unit Value	@$.51	Unit Value	@$.51	Unit Value	@$.51
.1	.05	5.0	2.55	9.9	5.04
.2	.10	5.1	2.60	10.0	5.10
.3	.15	5.2	2.65	10.5	5.35
.4	.20	5.3	2.70	11.0	5.61
.5	.25	5.4	2.75	11.5	5.86
.6	.30	5.5	2.80	12.0	6.12
.7	.35	5.6	2.85	12.5	6.37
.8	.40	5.7	2.90	13.0	6.63
.9	.45	5.8	2.95	13.5	6.88
1.0	.51	5.9	3.00	14.0	7.14
1.1	.56	6.0	3.06	14.5	7.39
1.2	.61	6.1	3.11	15.0	7.65
1.3	.66	6.2	3.16	16.0	8.16
1.4	.71	6.3	3.21	17.0	8.67
1.5	.76	6.4	3.26	18.0	9.18
1.6	.81	6.5	3.31	19.0	9.69
1.7	.86	6.6	3.36	20.0	10.20
1.8	.91	6.7	3.41	21.0	10.71
1.9	.96	6.8	3.46	22.0	11.22
2.0	1.02	6.9	3.51	23.0	11.73
2.1	1.07	7.0	3.57	24.0	12.24
2.2	1.12	7.1	3.62	25.0	12.75
2.3	1.17	7.2	3.67	30.0	15.30
2.4	1.22	7.3	3.72	35.0	17.85
2.5	1.27	7.4	3.77	40.0	20.40
2.6	1.32	7.5	3.82	45.0	22.95
2.7	1.37	7.6	3.87	50.0	25.50
2.8	1.42	7.7	3.92	55.0	28.05
2.9	1.47	7.8	3.97	60.0	30.60
3.0	1.53	7.9	4.02	65.0	33.15
3.1	1.58	8.0	4.08	70.0	35.70
3.2	1.63	8.1	4.13	75.0	38.25
3.3	1.68	8.2	4.18	80.0	40.80
3.4	1.73	8.3	4.23	85.0	43.35
3.5	1.78	8.4	4.28	90.0	45.90
3.6	1.83	8.5	4.33	95.0	48.45
3.7	1.88	8.6	4.38	100.0	51.00
3.8	1.93	8.7	4.43	105.0	53.55
3.9	1.98	8.8	4.48	110.0	56.10
4.0	2.04	8.9	4.53	115.0	58.65
4.1	2.09	9.0	4.59	120.0	61.20
4.2	2.14	9.1	4.64	125.0	63.75
4.3	2.19	9.2	4.69	130.0	66.30
4.4	2.24	9.3	4.74	140.0	71.40
4.5	2.29	9.4	4.79	150.0	76.50
4.6	2.34	9.5	4.84	160.0	81.60
4.7	2.39	9.6	4.89	170.0	86.70
4.8	2.44	9.7	4.94	180.0	91.80
4.9	2.49	9.8	4.99	190.0	96.90
				200.0	102.00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-155, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-20-155, filed 11/30/81, effective 1/1/82; 80-18-033 (Order 80-24), § 296-20-155, filed 12/1/80, effective 1/1/81. Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-155, filed 11/30/79, effective 1/1/80; Order 77-27, § 296-20-155, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-155, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-20-155, filed 1/30/74.]

WAC 296-20-170 Pharmacy--Acceptance of rules and fees. Acceptance and filling of a prescription for an injured worker entitled to benefits under the industrial insurance law, constitutes acceptance of the department's rules and fees. When there is questionable eligibility, (i.e., no claim number, prescription is for medication other than usually prescribed for industrial injury; or pharmacist has reason to believe claim is closed or rejected), the pharmacist may require the worker to pay for the prescription. In these cases, the pharmacist must furnish the worker with a signed receipt and a nonnegotiable copy of the prescription including national drug code and quantity or a completed department pharmacy bill form signed in the appropriate areas verifying worker has paid for the prescribed item(s) in order for the worker to bill the department or self-insurer for reimbursement. The worker may not be charged more than the amount allowable by the department or self-insurer. The worker must submit such reimbursement request within ninety days of service.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-170, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-170, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-170, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17001 Allowance and payment for medication. The department or self-insurer will pay for medications or supplies dispensed for the treatment of conditions resulting from an industrial injury and/or conditions which are retarding the recovery from the industrial injury, for which the department or self-insurer has accepted temporary responsibility.

Approved generics are to be substituted for brand name pharmaceuticals in all cases unless the worker's condition will not tolerate a generic preparation and the prescribing physician indicates no substitution is permitted. A list of approved generics and their base cost will be published periodically by the department.

Items not normally paid include: Syringes, injectables, heating pads, vibrators, personal appliances, oral nutritional supplements, anorexiants, and medications normally prescribed for systemic conditions. These items may be authorized to certain individuals in unusual circumstances; prior approval from the department or self-insurer is mandatory.

Rental or purchase of medical equipment must be prior authorized by the department or self-insurer.

No bills will be paid for medication dispensed after the date of order and notice of claim closure, on an accepted claim; nor, on rejected claims; nor for conditions unrelated to the industrial condition.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-17001, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-20-17001, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17001, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-17001, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17002 Billing. In addition to the billing procedures described in WAC 296-20-125 the current national drug code number for each prescribed drug, followed by the average wholesale price to the pharmacy must be entered on each prescription. The department's statement for pharmacy services must be used when billing the department for NDC medications and supplies. The department's statement for miscellaneous services must be used when billing the department for non-NDC medications and supplies. In addition, the claimant's name, claim number, date of injury, prescribing doctor's name and department of labor and industries provider number; and the assigned department provider number for the pharmacy must be on the bill. Bills for medication not containing this information will be returned to the pharmacy. Billing must be made within ninety days of service. It is requested bills be presented on a monthly basis.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-20-17002, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-20-17002, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17002, filed 12/1/80, effective 1/1/81; Order 76-34, § 296-20-17002, filed 11/24/76, effective 1/1/77.]

WAC 296-20-17003 Fees. Payment for drugs and medications including all oral nonlegend drugs will be made at the average wholesale price plus an additional fee, on the following basis:

Wholesale cost		Additional fee
up to $3.00	+	$5.00
$3.01 to $8.00	+	$6.00
$8.01 to $15.00	+	$7.50
$15.01 & over	+	$8.00 + 10% average wholesale price

Orders may be written for over-the-counter nonoral drugs or nondrug items on department prescription forms. These items are to be priced on a forty percent margin (the average wholesale price ÷ .6).

Compounded prescriptions will be paid at the cost of the ingredients plus the applicable professional component based on that cost as indicated above.

Per RCW 82.08.0281 prescription drugs and oral or topical over-the-counter medications are nontaxable.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-20-17003, filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-033 (Order 80-24), § 296-20-17003, filed 12/1/80, effective 1/1/81; Order 77-27, § 296-20-17003, filed 11/30/77, effective 1/1/78; Order 76-34, § 296-20-17003, filed 11/24/76, effective 1/1/77.]

WAC 296-20-200 General information. (1) The department of labor and industries has promulgated the following rules and categories to provide a comprehensive system of classifying unspecified permanent partial disabilities in the proportion they reasonably bear to total bodily impairment. The department's objectives are to reduce litigation and establish more certainty and uniformity in the rating of unspecified permanent partial disabilities pursuant to RCW 51.32.080(2).

(2) The following system of rules and categories directs the examining physician's attention to the actual conditions he finds and establishes a uniform system for conducting rating examinations and reporting his findings and conclusions in accord with broadly accepted medical principles.

The evaluation of bodily impairment must be made by medical experts. This system recognizes and provides for this. After conducting his examination, the examining physician will choose the appropriate category for each bodily area or system involved in the particular claim and include this information in his report. He will, therefore, in addition to describing the workmen's condition in his report, submit his conclusions as to the relative severity of the impairment by giving it in terms of a defined condition rather than a personal opinion as to a percentage figure. In the final section of this system of categories and rules are some rules for determining disabilities and the classification of disabilities in bodily impairment is listed for each category. These last provisions are for the department's administrative use in acting upon the medical opinions which have been submitted to it.

(3) In preparing this system, the department has complied with its duty to enact rules classifying unspecified disabilities in light of statutory references to nationally recognized standards or guides for determining various bodily impairments. Accordingly, the department has obtained and acted upon sound established medical opinion in thus classifying unspecified disabilities in the reasonable proportion they bear to total bodily impairment. In framing descriptive language of the categories and in assigning a percentage of disability, careful consideration has been given to nationally recognized medical standards and guides. Both are matters calling for the use of expert medical knowledge. For this reason, the meaning given the words used in this set of categories and accompanying rules, unless the text or context clearly indicates the contrary, is the meaning attached to the words in normal medical usage.

(4) The categories describe levels of physical and mental impairment. Impairment is anatomic or functional abnormality or loss of function after maximum medical rehabilitation has been achieved. This is the meaning of "impairment" as the word is used in the guides mentioned above. This standard applies to all persons equally, regardless of factors other than loss of physical or mental function. Impairment is evaluated without reference to the nature of injury or the treatment therefore, but is based on the functional loss due to the injury or occupational disease. The categories have been framed to include conditions in other bodily areas which derive from the primary impairment. The categories also include the presence of pain, tenderness and other complaints. Workmen with comparable loss of function thus receive comparable awards.

(5) These rules and categories (WAC 296-20-200 through 296-20-690) shall only be applicable to compensable injuries occurring on or after the effective date of these rules and categories.

(6) These rules and categories (WAC 296-20-200 through 296-20-690) shall be applicable only to cases of

permanent partial disability. They have no applicability to determinations of permanent total disability.

[Order 74-32, § 296-20-200, filed 6/21/74, effective 10/1/74.]

WAC 296-20-210 General rules. (1) These general rules establish a uniform standard for conducting examinations and submitting reports of examinations. These general rules must be followed by physicians who make examinations or evaluations of permanent bodily impairment.

(a) Examinations for the medical determination of the extent of permanent bodily impairment shall be made only by physicians currently licensed to practice medicine and surgery.

(b) Whenever an examination is made, the physician shall record, among other pertinent information, the complete history as obtained from the person examined; the complete history of past injuries and diseases; the complaints; the age, sex, height and weight; x-ray findings and diagnostic tests made or reviewed in connection with the examination; the diagnosis; and all findings, including negative findings, in all bodily areas and systems where a detailed review of systems reveals past or present complaints. The physician shall record his conclusions as to: Whether the residuals of the injury are fixed; whether treatment is required for the injury and, if so, any treatment shall be described. If the examining physician finds residuals of the injury are fixed, he shall record the appropriate category or categories of permanent impairment for diagnoses attributable to the industrial injury or occupational disease. Conditions or impairments not attributable to the industrial injury or occupational disease shall be described and diagnosed in the report, with a description of how they affect the person examined and the appropriate category of permanent impairment where possible.

(c) The examining physician shall not assign a percentage figure for permanent bodily impairment described in the categories established herein.

(d) Reports shall specify diagnoses and medical terms as listed in current procedural terminology (CPT), current medical information and terminology (CMIT), international classification of diseases adopted (ICDA), or standard nomenclature of disease, except when otherwise specified in these rules.

[Order 74-32, § 296-20-210, filed 6/21/74, effective 10/1/74.]

WAC 296-20-220 Special rules for evaluation of permanent bodily impairment. (1) Evaluations of permanent bodily impairment using categories require uniformity in procedure and terminology. The following rules have been enacted to produce this uniformity and shall apply to all evaluations of permanent impairment of an unspecified nature.

(a) Gradations of relative severity shall be expressed by the words "minimal," "mild," "moderate" and "marked" in an ascending scale. "Minimal" shall describe deviations from normal responses which are not medically significant. "Mild," "moderate" and "marked" shall describe ranges of medically significant deviations from normal responses. "Mild" shall describe the least severe third. "Moderate" shall describe the middle third. "Marked" shall describe the most severe third.

(b) "Permanent" describes those conditions which are fixed, lasting and stable, and from which within the limits of medical probability, further recovery is not expected.

(c) "Impairment" means a loss of physical or mental function.

(d) "Total bodily impairment," as used in these rules, is the loss of physical or mental function which is essentially complete short of death.

(e) The examining physician shall not assign a percentage figure for permanent bodily impairment described in the categories established herein.

(f) The method of evaluating impairment levels is by selection of the appropriate level of impairment. These descriptive levels are called "categories." Assessments of the level of impairment are to be made by comparing the condition of the injured workman with the conditions described in the categories and selecting the most appropriate category.

These rules and categories for various bodily areas and systems provide a comprehensive system for the measurement of disabling conditions which are not already provided for in the list of specified permanent partial disabilities in RCW 51.32.080(1). Disabilities resulting from loss of central visual acuity, loss of an eye by enucleation, loss of hearing, amputation or loss of function of the extremities will continue to be evaluated as elsewhere provided in RCW 51.32.080.

The categories have been classified in percentages in reasonable proportion to total bodily impairment for the purpose of determining the proper award. Provision has been made for correctly weighing the overall impairment due to particular injuries or occupational disease in cases in which there are preexisting impairments.

(g) The categories of the various bodily areas and systems are listed in the order of increasing impairment except as otherwise specified. Where several categories are given for the evaluation of the extent of permanent bodily impairment, the impairments in the higher numbered categories, unless otherwise specified, include the impairments in the lesser numbered categories. No category for a condition due to an injury shall be selected unless that condition is permanent as defined by these rules.

The examining physician shall select the one category which most accurately indicates the overall degree of permanent impairment unless otherwise instructed. Where there is language in more than one category which may appear applicable, the category which most accurately reflects the overall impairment shall be selected.

The categories include appropriate subjective complaints in an ascending scale in keeping with the severity of objective findings, thus a higher or lower category is not to be selected purely on the basis of unusually great or minor complaints.

(h) When the examination discloses a preexisting permanent bodily impairment in the area of the injury, the

examining physician shall report the findings and any category of impairment appropriate to the workman's condition prior to his industrial injury in addition to the findings and the categories appropriate to the workman's condition after the injury.

(i) Objective physical or clinical findings are those findings on examination which are independent of voluntary action and can be seen, felt, or consistently measured by examining physicians.

(j) Subjective complaints or symptoms are those perceived only by the senses and feelings of the person being examined which cannot be independently proved or established.

(k) Muscle spasm as used in these rules is an involuntary contraction of a muscle or group of muscles of a more than momentary nature.

(l) An involuntary action is one performed independently of the will.

(m) These special rules for evaluation of permanent bodily impairment shall apply to all examinations for the evaluation of impairment, in accordance with RCW 51-.32.080, for the body areas or systems covered by or enumerated in WAC 296-20-230 through 296-20-660.

(n) The rules for evaluation of each body area or system are an integral part of the categories for that body area or system.

(o) In cases of injury or occupational disease of bodily areas and/or systems which are not included in these categories or rules and which do not involve loss of hearing, loss of central visual acuity, loss of an eye by enucleation or loss of the extremities or use thereof, examining physicians shall determine the impairment of such bodily areas and/or systems in terms of percentage of total bodily impairment.

(p) The words used in the categories of impairments, in the rules for evaluation of specific impairments, the general rules, and the special rules shall be deemed, unless the context indicates the contrary, to have their general and accepted medical meanings.

(q) The rating of impairment due to total joint replacement shall be in accordance with the limitation of motion guidelines as set forth in the "Guides to the Evaluation of Permanent Impairment" of American Medical Association, with department of labor and industries acknowledgement of responsibility for failure of prostheses beyond the seven year limitation.

[Statutory Authority: RCW 51.04.030 and 51.16.035. 79-12-086 (Order 79-18), § 296-20-220, filed 11/30/79, effective 1/1/80; Order 74-32, § 296-20-220, filed 6/21/74, effective 10/1/74.]

WAC 296-20-230 Cervical and cervico-dorsal impairments. (1) Rules for evaluation of cervical and cervico-dorsal impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selecting the appropriate category, only insofar as productive of cervical or cervico-dorsal impairment.

(b) Gradations of clinical findings of cervico-dorsal impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree in the neck or extremities.

(d) Bladder and/or bowel sphincter impairments deriving from cervical and cervico-dorsal impairment shall be evaluated separately.

(e) Neck as used in these rules and categories shall include the cervical and adjacent areas.

[Order 74-32, § 296-20-230, filed 6/21/74, effective 10/1/74.]

WAC 296-20-240 Categories of permanent cervical and cervico-dorsal impairments. (1) No objective clinical findings are present. Subjective complaints may be present or absent.

(2) Mild cervico-dorsal impairment, with objective clinical findings of such impairment with neck rigidity substantiated by x-ray findings of loss of anterior curve, without significant objective neurological findings.

This and subsequent categories include the presence or absence of pain locally and/or radiating into an extremity or extremities. This and subsequent categories also include the presence or absence of reflex and/or sensory losses. This and subsequent categories also include objectively demonstrable herniation of a cervical intervertebral disc with or without discectomy and/or fusion, if present.

(3) Mild cervico-dorsal impairment, with objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with significant objective findings of mild nerve root involvement.

This and subsequent categories include the presence or absence of any other neurological deficits not otherwise specified in these categories with the exception of bladder and/or bowel sphincter impairments.

(4) Moderate cervico-dorsal impairment, with objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with objective findings of moderate nerve root involvement with weakness and numbness in one or both upper extremities.

(5) Marked cervico-dorsal impairment, with marked objective clinical findings of such impairment, with neck rigidity substantiated by x-ray findings of loss of anterior curve, narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with objective findings of marked nerve root involvement with weakness and numbness in one or both upper extremities.

[Order 74-32, § 296-20-240, filed 6/21/74, effective 10/1/74.]

WAC 296-20-250 Impairments of the dorsal area. (1) Rules for evaluation of permanent dorsal area impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selection of the appropriate category, only insofar as productive of dorsal area impairment.

(b) Gradations of clinical findings of dorsal impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) Categories 2 and 3 include the presence of complaints of whatever degree.

(d) Bladder and/or bowel sphincter impairments deriving from impairments of the dorsal area shall be evaluated separately.

(e) Impairments which also involve the cervical or lumbar areas shall be evaluated only under the cervical and cervico–dorsal or dorsolumbar and lumbosacral categories.

[Order 74–32, § 296–20–250, filed 6/21/74, effective 10/1/74.]

WAC 296–20–260 Categories of permanent dorsal area impairments. (1) No objective clinical findings are present. Subjective complaints may be present or absent.

(2) Mild or moderate dorsal impairment, with objective clinical findings of such impairment, without significant objective neurological findings, with or without x–ray changes of narrowed intervertebral disc spaces and/or osteoarthritic lipping of intervertebral margins. Includes the presence or absence of reflex and/or sensory losses.

This and the subsequent category include the presence or absence of pain, locally or radiating from the dorsal area.

(3) Marked dorsal impairment, with marked objective clinical findings, with marked x–ray findings of narrowed intervertebral disc spaces and/or osteoarthritic lipping of vertebral margins, with significant objective neurological deficits, complaints and/or findings, deriving from dorsal impairment.

[Order 74–32, § 296–20–260, filed 6/21/74, effective 10/1/74.]

WAC 296–20–270 Dorso–lumbar and lumbosacral impairments. (1) Rules for evaluation of permanent dorso–lumbar and lumbosacral impairments are as follows:

(a) Muscle spasm or involuntary guarding, bony or fibrous fusion, any arthritic condition, internal fixation devices or other physical finding shall be considered, in selecting the appropriate category, only insofar as productive of low back impairment.

(b) Gradations of clinical findings of low back impairments in terms of "mild," "moderate" or "marked" shall be based on objective medical tests.

(c) All of the low back categories include the presence of complaints of whatever degree.

(d) Any and all neurological deficits, complaints, and/or findings in other bodily areas or systems which are the result of dorso–lumbar and lumbosacral impairments, except for objectively demonstrated bladder and/or bowel sphincter impairments, shall be evaluated by the descriptions contained in the categories of dorso–lumbar and lumbosacral impairments.

(e) Bladder and/or bowel sphincter impairments deriving from dorso–lumbar and lumbosacral impairments shall be evaluated separately.

(f) Low back as used in these rules and categories includes the lumbar and adjacent areas.

[Order 74–32, § 296–20–270, filed 6/21/74, effective 10/1/74.]

WAC 296–20–280 Categories of permanent dorso–lumbar and lumbosacral impairments. (1) No objective clinical findings. Subjective complaints and/or sensory losses may be present or absent.

(2) Mild low back impairment, with mild intermittent objective clinical findings of such impairment but no significant x–ray findings and no significant objective motor loss. Subjective complaints and/or sensory losses may be present.

(3) Mild low back impairment, with mild continuous or moderate intermittent objective clinical findings of such impairment but without significant x–ray findings or significant objective motor loss.

This and subsequent categories include: The presence or absence of reflex and/or sensory losses; the presence or absence of pain locally and/or radiating into an extremity or extremities; the presence or absence of a laminectomy or discectomy with normally expected residuals.

(4) Mild low back impairment, with mild continuous or moderate intermittent objective clinical findings of such impairment, with mild but significant x–ray findings and with mild but significant motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

This and subsequent categories include the presence or absence of a surgical fusion with normally expected residuals.

(5) Moderate low back impairment, with moderate continuous or marked intermittent objective clinical findings of such impairment, with moderate x–ray findings and with mild but significant motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

(6) Marked low back impairment, with marked intermittent objective clinical findings of such impairment, with moderate or marked x–ray findings and with moderate motor loss objectively demonstrated by atrophy and weakness of a specific muscle or muscle group.

(7) Marked low back impairment, with marked continuous objective clinical findings of such impairment, with marked x–ray findings and with marked motor loss objectively demonstrated by marked atrophy and weakness of a specific muscle or muscle group.

(8) Essentially total loss of low back functions, with marked x–ray findings and with marked motor loss objectively demonstrated by marked atrophy and weakness of a muscle group or groups.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–20–280, filed 8/2/83; Order 74–32, § 296–20–280, filed 6/21/74, effective 10/1/74.]

WAC 296–20–290 Impairments of the pelvis. (1) Rules for impairment of the pelvis:

(a) All of these categories include the presence of complaints of whatever degree.

(b) Categories 2, 5, 6 and 7 describe separate entities and more than one may be selected when appropriate. Category 9 includes the findings described in Category

3, and Category 8 includes the findings described in Category 4.

[Order 74-32, § 296-20-290, filed 6/21/74, effective 10/1/74.]

WAC 296-20-300 Categories of permanent impairments of the pelvis. (1) Healed pelvic fractures without displacement, without residuals; healed fractures with displacement without residuals, of: Single ramus, bilateral rami, ilium, innominate or coccyx; or healed fracture of single rami with displacement with deformity and residuals.

(2) Healed fractures with displacement with deformity and residuals of ilium.

(3) Healed fractures of symphysis pubis, without separation with displacement without residuals.

(4) Healed fractures of sacrum with displacement without residuals.

(5) Healed fracture of bilateral rami with displacement with deformity and residuals.

(6) Excision or nonunion of fractures of coccyx.

(7) Healed fractures of innominate, displaced one inch or more, with deformity and residuals.

(8) Healed fractures of sacrum extending into sacroiliac joint with deformity and residuals.

(9) Healed fractures of symphysis, displaced or separated, with deformity and residuals.

[Order 74-32, § 296-20-300, filed 6/21/74, effective 10/1/74.]

WAC 296-20-310 Convulsive neurological impairments. (1) Rules for evaluation of convulsive neurological impairments:

(a) The description of categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-310, filed 6/21/74, effective 10/1/74.]

WAC 296-20-320 Categories of permanent convulsive neurological impairments. (1) No electroencephalogram findings of convulsive neurological disorder. Subjective complaints may be present or absent.

(2) Electroencephalogram findings of convulsive neurological disorder, but on appropriate medication there are no seizures.

(3) Electroencephalogram findings of convulsive neurological disorder, and on appropriate medication there are each year either one through four major seizures or one through twelve minor seizures.

(4) Electroencephalogram findings of convulsive neurological disorder, and on appropriate medication there are each year either more than four major seizures or more than twelve minor seizures.

[Order 74-32, § 296-20-320, filed 6/21/74, effective 10/1/74.]

WAC 296-20-330 Impairments of mental health. (1) Rules for evaluation of permanent impairment of mental health:

(a) Mental illness means malfunction of the psychic apparatus that significantly interferes with ordinary living.

(b) Each person has a pattern of adjustment to life. The pattern of adjustment before the industrial injury or occupational disease serves as a base line for all assessments of whether there has been a permanent impairment due to the industrial injury or occupational disease.

(c) To determine the preinjury pattern of adjustment, all evaluations of mental health shall contain a complete preinjury history including, but not necessarily limited to: Family background and the relationships with parents or other nurturing figures; extent of education and reaction to it; military experience, if any; problems with civil authorities; any history of prolonged illness, and difficulty with recovery; any history of drug abuse or alcoholism; employment history, the extent of and reaction to responsibility, and relationships with others at work; capacity to make and retain friends; relationships with spouses and children; nature of daily activities, including recreation and hobbies; and lastly, some summary statement about the sources of the patient's self-esteem and sense of identity. Both strengths and vulnerabilities of the person shall be included.

(d) Differences in adjustment patterns before and after the industrial injury or occupational disease shall be described, and the report shall contain the examining physician's opinion as to whether any differences: (1) Are the result of the industrial injury or occupational disease and its sequelae, in the sense they would not have occurred had there not been the industrial injury or occupational disease; (2) are permanent or temporary; (3) are more than the normal, self-correcting and expectable response to the stress of the industrial injury or occupational disease; (4) constitute an impairment psychosocially or physiologically; and (5) are susceptible to treatment, and, if so, what kind. The presence of any unrelated or coincidental mental impairment shall always be mentioned.

(e) All reports of mental health evaluations shall use the diagnostic terminology listed in the *Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association.*

(f) No classification of impairment shall be made for complaints where the quality of daily life does not differ substantially from the preinjury pattern. A patient not currently employed may not engage in the same activities as when working, but the level and variety of his activities and zest for them shall distinguish the purely situational difference from cases of regression and withdrawal. In cases where some loss of use of body member is claimed, no category or impairment shall be assigned unless there are objective findings of physiologic regression or consistent evidence of altered adaptability.

(g) The physician shall identify the schizoid, antisocial, inadequate, sociopathic, passive, hysterical, paranoid, or dependent personality types. Patients with these longstanding character disorders may show problem behavior that seems more related to current stress than it is, sometimes unconsciously insinuating themselves into difficult situations of which they then complain. Emotional reactions to an injury and subsequent events must be carefully evaluated in these patients. It must be medically probable that such reactions are permanent before a category of impairment can be attributed to the injury;

temporary reactions or preexisting psychopathology must be differentiated.

[Order 74-32, § 296-20-330, filed 6/21/74, effective 10/1/74.]

WAC 296-20-340 Categories for evaluation of permanent impairments of mental health. (1) Nervousness, irritability, worry or lack of motivation following an injury and commensurate with it and/or other situational responses to injury that do not alter significantly the life adjustment of the patient may be present.

(2) Any and all permanent worsenings of preexisting personality traits or character disorders where aggravation of preexisting personality trait or character disorder is the major diagnosis; mild loss of insight, mildly deficient judgment, or rare difficulty in controlling behavior, anxiety with feelings of tension that occasionally limit activity; lack of energy or mild apathy with malaise; brief phobic reactions under usually avoidable conditions; mildly unusual and overly rigid responses that cause mild disturbance in personal or social adjustment; rare and usually self-limiting psycho-physiological reactions; episodic hysterical or conversion reactions with occasional self-limiting losses of physical functions; a history of misinterpreted conversations or events, which is not a preoccupation; is aware of being absentminded, forgetful, thinking slowly occasionally or recognizes some unusual thoughts; mild behavior deviations not particularly disturbing to others; shows mild over-activity or depression; personal appearance is mildly unkempt. Despite such features, productive activity is possible most of the time. If organicity is present, some difficulty may exist with orientation; language skills, comprehension, memory; judgment; capacity to make decisions; insight; or unusual social behavior; but the patient is able to carry out usual work day activities unassisted.

(3) Episodic loss of self-control with risk of causing damage to the community or self; moments of morbid apprehension; periodic depression that disturbs sleep and eating habits or causes loss of interest in usual daily activities but self-care is not a problem; fear motivated behavior causing mild interference with daily life, frequent emotogenic organ dysfunctions requiring treatment; obsessive-compulsive reactions which limit usual activity; periodic losses of physical function from hysterical or conversion reactions; disturbed perception in that patient does not always distinguish daydreams from reality; recognizes his fantasies about power and money are unusual and tends to keep them secret; thought disturbances cause patient to fear the presence of serious mental trouble; deviant social behavior can be controlled on request; exhibits periodic lack of appropriate emotional control; mild disturbance from organic brain disease such that a few work day activities require supervision.

(4) Very poor judgment, marked apprehension with startle reactions, foreboding leading to indecision, fear of being alone and/or insomnia; some psychomotor retardation or suicidal preoccupation; fear-motivated behavior causing moderate interference with daily life; frequently recurrent and disruptive organ dysfunction with pathology of organ or tissues; obsessive-compulsive reactions causing inability to work with others or adapt; episodic losses of physical function from hysterical or conversion reactions lasting longer than several weeks; misperceptions including sense of persecution or grandiosity which may cause domineering, irritable or suspicious behavior; thought disturbance causing memory loss that interferes with work or recreation; periods of confusion or vivid daydreams that cause withdrawal or reverie; deviations in social behavior which cause concern to others; lack of emotional control that is a nuisance to family and associates; moderate disturbance from organic brain disease such as to require a moderate amount of supervision and direction of work day activities.

(5) Marked apprehension so as to interfere with memory and concentration and/or to disturb markedly personal relationships; depression causing marked loss of interest in daily activities, loss of weight, unkempt appearance, marked psycho-motor retardation, suicidal preoccupation or attempts, or marked agitation as well as depression; marked phobic reactions with bizarre and disruptive behavior; psychophysiological reactions resulting in lasting organ or tissue damage; obsessive-compulsive reactions that preclude patient's usual activity; frequent or persistent loss of function from conversion or hysterical reactions with regressive tissue or organ change; defects in perception including frank illusions or hallucinations occupying much of the patient's time; behavior deviations so marked as to interfere seriously with the physical or mental well-being or activities of others; lack of emotional control including marked irritability or overactivity.

[Order 74-32, § 296-20-340, filed 6/21/74, effective 10/1/74.]

WAC 296-20-350 Cardiac impairments. (1) Rule for evaluation of permanent cardiac impairments:

(a) Classification of impairment using the following categories shall be based upon a carefully obtained history, thorough physical examination and the use of appropriate laboratory aids.

[Order 74-32, § 296-20-350, filed 6/21/74, effective 10/1/74.]

WAC 296-20-360 Categories of permanent cardiac impairments. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of mild organic heart disease but no signs of congestive heart failure. No medically appropriate symptoms produced by prolonged exertion or intensive effort or marked emotional stress.

(3) Objective findings of mild organic heart disease but no signs of congestive heart failure. Medically appropriate symptoms produced by prolonged exertion or intensive effort, or marked emotional stress but not by usual daily activities.

(4) Objective findings of moderate organic heart disease but no signs of congestive heart failure. Medically appropriate symptoms produced by prolonged exertion or intensive effort or marked emotional stress but not by usual daily activities.

(5) Objective findings of marked organic heart disease with minimal signs of congestive heart failure with therapy. Medically appropriate symptoms produced by usual daily activities.

(6) Objective findings of marked organic heart disease with mild to moderate signs of congestive heart failure despite therapy. Medically appropriate symptoms produced by usual daily activities.

[Order 74-32, § 296-20-360, filed 6/21/74, effective 10/1/74.]

WAC 296-20-370 Respiratory impairments. (1) Rules for evaluation of permanent respiratory impairments:

(a) All reports of physical examination of persons for respiratory impairment shall include: Date of examination, name, sex, address, birthdate, marital status, and occupation of the person being examined; height, weight, temperature, pulse rate, blood pressure and respiratory rate and physical findings on inspection, palpation, percussion, and auscultation, vital capacity tests including one-second forced expiratory volume, forced vital capacity and maximum voluntary ventilation; all symptoms such as wheeze, cough, orthopnea, chest pain, paroxysmal nocturnal dyspnea, expectoration, hemoptysis, as to date of onset, course with descriptions, variation, whether influenced by bodily activity, emotional stress, posture, allergens, immediate environmental factors, medications, frequency and duration, and how they are affected by respiratory infections; the history of the particular exposure, a history of any previous chest x-rays, any allergies, cardiac symptoms or diagnosis, chest surgery or deformities, trauma, or other conditions such as pneumothorax, pulmonary infarct or chemical bronchitis; all pertinent personal history of habits such as smoking, weight gain or loss, fatigability, appetite; use of medications such as steroids, digitalis, antibiotics, bronchodilators, expectorants, etc., and occupational history.

(b) Categories 2 through 6 in WAC 296-20-380 include the presence of complaints of whatever degree.

(c) Dyspnea is the major complaint of respiratory impairment, and can usually be explained by the presence of abnormal lung ventilation, perfusion, or diffusion, measured either at rest or exercise. Since mechanisms of respiratory tract damage may differ widely, individual lung function tests may not wholly correspond to the following categories of impairment, but the examining physician should be able to categorize the vast majority of persons, using a "best fit" method for the following respiratory impairment Categories I-VI.

(d) Persisting variable respiratory impairment. Variable respiratory impairment due to allergic or irritative disorders of the respiratory tract, such as bronchial asthma or reactive airway disease, caused or substantially aggravated by factors in the work place, shall be evaluated by detailed narrative report, including rationale for the work relationship, relative importance of nonwork related cofactors, such as preexisting asthma, tobacco usage, or other personal habits, the need for regular medication to substantially improve or control the respiratory condition, and the prognosis. If tests of ventilatory function, done when the person is in clinical remission, are nearly normal (1 second forced expiratory volume 80 percent or greater of predicted), an appropriate provocative bronchial challenge test should be done to demonstrate the presence of unusual respiratory sensitivity. When the respiratory condition (asthma or reactive airway disease) is thought to be permanent, but the degree of respiratory impairment varies, then the examining physician shall give an estimate of percentage of total bodily impairment, as per Rule 15 or WAC 296-20-220.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-20-370, filed 11/29/82, effective 1/1/83; Order 74-32, § 296-20-370, filed 6/21/74, effective 10/1/74.]

WAC 296-20-380 Categories of permanent respiratory impairments. (1) Tests of ventilatory functions are not less than 85 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 93 percent or greater. Subjective complaints may be present or absent.

(2) Tests of ventilatory function range from 70 to 85 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 93 percent or greater. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(3) Tests of ventilatory function range from 60 to 70 percent of predicted normal for the person's age, sex and height and/or arterial oxygen saturation at rest is normal but after exercise is 88 to 93 percent. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(4) Tests of ventilatory function range from 50 to 60 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is 88 to 93 percent. The single breath diffusing capacity (if performed) is greater than 50 percent predicted. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(5) Tests of ventilatory function range from 40 to 50 percent of predicted normal for the person's age, sex and height. Arterial oxygen saturation at rest and after exercise is less than 88 percent. The single breath diffusing capacity is greater than 40 percent predicted. Dyspnea consistent with ventilatory function and arterial oxygen saturation.

(6) Tests of ventilatory function are below 40 percent of predicted normal for the patient's age, sex and height. Arterial oxygen saturation at either rest or exercise is 83 percent or less. The single breath diffusing capacity is 40 percent or less of predicted. Grade III or IV dyspnea is present, measured on a scale of 0 to 4.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-20-380, filed 11/29/82, effective 1/1/83; Order 74-32, § 296-20-380, filed 6/21/74, effective 10/1/74.]

WAC 296-20-390 Air passage impairments. (1) Rule for evaluation of permanent air passage impairments:

(a) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-390, filed 6/21/74, effective 10/1/74.]

WAC 296-20-400 Categories of permanent air passage impairments. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally. No dyspnea caused by the air passage defect even on activity requiring prolonged exertion or intensive effort.

(3) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally, dyspnea caused by the air passage defect produced only by prolonged exertion or intensive effort.

(4) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, complete obstruction of nasopharynx or of nasal passages bilaterally, with permanent tracheostomy or stoma, dyspnea caused by the air passage defect produced only by prolonged exertion or intensive effort.

(5) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, with or without permanent tracheostomy or stoma if dyspnea is produced by moderate exertion.

(6) Objective findings of one or more of the following air passage defects: Partial obstruction of oropharynx, laryngopharynx, larynx, trachea, bronchi, with or without permanent tracheostomy or stoma if dyspnea is produced by mild exertion.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-20-400, filed 8/2/83; Order 74-32, § 296-20-400, filed 6/21/74, effective 10/1/74.]

WAC 296-20-410 Nasal septum impairments. (1) Rules for evaluation of permanent air passage impairments due to nasal septum perforation.

(a) These categories, if appropriate, are to be used in addition to the categories of permanent air passage impairment.

(b) Categories 1 and 2 include complaints of whatever degree.

[Order 74-32, § 296-20-410, filed 6/21/74, effective 10/1/74.]

WAC 296-20-420 Categories of permanent air passage impairment due to nasal septum perforations. (1) Perforation or perforations posterior to the cartilaginous septum.

(2) Perforation or perforations through or anterior to the cartilaginous septum.

[Order 74-32, § 296-20-420, filed 6/21/74, effective 10/1/74.]

WAC 296-20-430 Loss of taste and smell. (1) Rule for evaluation of permanent loss of taste and smell.

(a) If the person being examined can detect any odor or taste, even though it cannot be named, no category shall be assigned.

[Order 74-32, § 296-20-430, filed 6/21/74, effective 10/1/74.]

WAC 296-20-440 Categories of permanent loss of taste and smell. (1) Loss of sense of taste.

(2) Loss of sense of smell.

[Order 74-32, § 296-20-440, filed 6/21/74, effective 10/1/74.]

WAC 296-20-450 Speech impairments. (1) Rules for evaluation of permanent speech impairments.

(a) The physician making an examination for evaluation of permanent speech impairment should have normal hearing and the examination should be conducted in a reasonably quiet office which approximates the noise level conditions of everyday living.

(b) Selection of the appropriate category of permanent speech impairment shall be based on direct observation of the speech of the person being examined, including, but not limited to: Response to interview, oral reading, and counting aloud. The observation shall be made with the physician about eight feet from the person being examined both when he faces the physician and with his back to the physician.

[Order 74-32, § 296-20-450, filed 6/21/74, effective 10/1/74.]

WAC 296-20-460 Categories of permanent speech impairments. (1) No objective findings of significant speech impairment are present. Subjective complaints may be present or absent.

(2) Can produce speech of sufficient audibility, intelligibility and functional efficiency for most everyday needs, although this may require effort and occasionally exceed capacity; listeners may occasionally ask for repetition and it may be difficult to produce some elements of speech, and there may be slow speaking and hesitation.

(3) Can produce speech of sufficient audibility, intelligibility and functional efficiency for many everyday needs, is usually heard under average conditions but may have difficulty in automobiles, busses, trains, or enclosed areas; can give name, address, and be understood by a stranger, but may have numerous inaccuracies and have difficulty articulating; speech may be interrupted, hesitant or slow.

(4) Can produce speech of sufficient audibility, intelligibility and functional efficiency for some everyday needs such as close conversation, conversation with family and friends, but has considerable difficulty in noisy places; voice tires rapidly and tends to become inaudible in a few seconds, strangers may find patient difficult to understand; patient may be asked to repeat often, and often can only sustain consecutive speech for brief periods.

(5) Can produce speech of sufficient audibility, intelligibility and functional efficiency for few everyday needs; can barely be heard by a close listener or over the telephone; may be able to whisper audibly but has no voice; can produce some speech elements; may have approximation of a few words such as names of family members which are, however, unintelligible out of context; cannot maintain uninterrupted speech flow, speech is labored, and its rate is impractically slow.

(6) Is unable to produce speech of sufficient audibility, intelligibility and functional efficiency for any everyday needs.

[Order 74-32, § 296-20-460, filed 6/21/74, effective 10/1/74.]

WAC 296-20-470 Skin impairments. (1) Rules for evaluation of permanent skin impairments.

(a) Evaluation of permanent impairment of the skin shall be based upon actual loss of function and cosmetic factors shall not be considered.

(b) Categories 2, 3, 4, 5 and 6 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-470, filed 6/21/74, effective 10/1/74.]

WAC 296-20-480 Categories of permanent skin impairments. (1) Objective findings of skin disorder may be present or absent but there is no or minimal limitation in daily activities. Subjective complaints may be present or absent.

(2) Objective findings of skin disorder are present and there is discomfort and minimal limitation in the performance of daily activities.

(3) Objective findings of skin disorder are present and there is limitation in some daily activities, including avoidance of and protective measures against certain chemical or physical agents. Intermittent symptomatic treatment is required.

(4) Objective findings of skin disorder are present and there is limitation in many daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

(5) Objective findings of skin disorder are present and there is limitation in most daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

(6) Objective findings of skin disorder are present and there is limitation in all daily activities, including avoidance of and protective measures against certain chemical or physical agents. Continuous symptomatic treatment is required.

[Order 74-32, § 296-20-480, filed 6/21/74, effective 10/1/74.]

WAC 296-20-490 Impairment of the upper digestive tract, stomach, esophagus or pancreas. (1) Rule for evaluation of permanent impairments of the upper digestive tract, stomach, esophagus or pancreas.

(a) Categories 2, 3, 4 and 5 include complaints of whatever degree.

[Order 74-32, § 296-20-490, filed 6/21/74, effective 10/1/74.]

WAC 296-20-500 Categories of permanent impairments of the upper digestive tract, stomach, esophagus or pancreas. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) There are objective findings of digestive tract impairment but no anatomic loss or alteration, continuous treatment is not required and weight can be maintained at the medically appropriate level.

(3) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs control symptoms, signs and/or nutritional state, and weight can be maintained at at least 90 percent of medically appropriate level.

(4) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs do not completely control symptoms, signs and/or nutritional state. Weight can be maintained at 80-90 percent of medically appropriate level.

(5) There are objective findings of digestive tract impairment, or there is anatomic loss or alteration. Dietary restrictions and drugs do not control symptoms, signs and/or nutritional state. Weight cannot be maintained as high as 80 percent of medically appropriate level.

[Order 74-32, § 296-20-500, filed 6/21/74, effective 10/1/74.]

WAC 296-20-510 Lower digestive tract impairments. (1) Rule for evaluation of permanent lower digestive tract impairments.

(a) Categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-510, filed 6/21/74, effective 10/1/74.]

WAC 296-20-520 Categories of permanent lower digestive tract impairments. (1) No objective findings of impairment of lower digestive tract. Subjective complaints may be present or absent.

(2) The objective findings of lower digestive tract impairment are infrequent and of brief duration, and there is limitation of activities, but special diet or medication is not required, and there are neither systemic manifestations nor impairment of nutrition.

(3) There are objective findings of lower digestive tract impairment or anatomic loss or alteration and mild gastrointestinal symptoms with occasional disturbance of bowel function, accompanied by moderate pain and minimal restriction of diet; mild symptomatic therapy may be necessary; no impairment of nutrition.

(4) There are moderate to marked intermittent bowel disturbances with continual or periodic pain; there is restriction of activities and diet during exacerbations, there are constitutional manifestations such as fever, anemia or weight loss. Includes but is not limited to any permanent ileostomy or colostomy.

[Order 74-32, § 296-20-520, filed 6/21/74, effective 10/1/74.]

WAC 296-20-530 Impairment of anal function. (1) Rule for evaluation of permanent impairment of anal function.

(a) Categories 2, 3 and 4 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-530, filed 6/21/74, effective 10/1/74.]

WAC 296-20-540 Categories of permanent impairments of anal function. (1) No objective findings of impairment of anal function. Subjective complaints may be present or absent.

(2) There are objective findings of mild organic disease, anatomic loss or alteration with loss of anal function and mild incontinence involving gas and/or liquid stool.

(3) There are objective findings of moderate anal disease, anatomic loss or alteration with loss of anal function and moderate incontinence requiring continual care.

(4) There are objective findings of marked anal disease, anatomic loss, alteration and/or complete fecal incontinence.

[Order 74-32, § 296-20-540, filed 6/21/74, effective 10/1/74.]

WAC 296-20-550 Liver and biliary tract impairments. (1) Rule for evaluation of permanent liver and biliary tract impairments.

(a) Categories 2, 3, 4 and 5 include complaints of whatever degree.

[Order 74-32, § 296-20-550, filed 6/21/74, effective 10/1/74.]

WAC 296-20-560 Categories of permanent liver and biliary tract impairments. (1) There are no objective findings of impairment of the liver or biliary tract. Subjective complaints may be present or absent.

(2) There are objective findings on biochemical studies of minimal impairment of liver function with or without symptoms, or there are occasional episodes of loss of function of the biliary tract, but nutrition and strength are good.

(3) There are objective findings on biochemical studies of mild impairment of liver function without symptoms, or there is recurrent biliary tract impairment, but no ascites, jaundice or bleeding esophageal varices and nutrition and strength are good.

(4) There are objective findings on biochemical studies of moderate impairment of liver function with jaundice, ascites, bleeding esophageal varices or gastric varices and nutrition and strength may be affected; or there is irreparable obstruction of the common bile duct with recurrent cholangitis.

(5) There are objective findings on biochemical studies of marked impairment of liver function and nutritional state is poor; or persistent jaundice, bleeding esophageal varices or gastric varices.

[Order 74-32, § 296-20-560, filed 6/21/74, effective 10/1/74.]

WAC 296-20-570 Impairments of the spleen, loss of one kidney, and surgical removal of the bladder with urinary diversion. (1) Rule for evaluation of permanent impairments of the spleen, loss of one kidney, and surgical removal of bladder with urinary diversion.

(a) Categories 1, 2 and 3 include complaints of whatever degree.

[Order 74-32, § 296-20-570, filed 6/21/74, effective 10/1/74.]

WAC 296-20-580 Categories of permanent impairment of the spleen, loss of one kidney, and surgical removal of bladder with urinary diversion. (1) Loss of spleen by splenectomy after age eight.

(2) Loss of one kidney by surgery or complete loss of function of one kidney.

(3) Surgical removal of bladder with urinary diversion.

[Order 74-32, § 296-20-580, filed 6/21/74, effective 10/1/74.]

WAC 296-20-590 Impairment of upper urinary tract. (1) Rule for evaluation of permanent impairment of upper urinary tract.

(a) Categories 2, 3, 4 and 5 include the presence of complaints of whatever nature.

[Order 74-32, § 296-20-590, filed 6/21/74, effective 10/1/74.]

WAC 296-20-600 Categories of permanent impairments of upper urinary tract. (1) No objective findings of impairment of upper urinary tract. Subjective complaints may be present or absent.

(2) Loss of upper urinary function as evidenced by creatinine clearance of 75 to 90 liters/24 hr. (52 to 62.5 ml/min) and PSP excretion of 15 percent to 20 percent in 15 minutes; or if there are intermittent objective findings of upper urinary tract disease or dysfunction not requiring continuous treatment or surveillance.

(3) Loss of upper urinary tract function as evidenced by creatinine clearance of 60 to 75 liters/24 hr. (42 to 52 ml/min) and PSP excretion of 10 percent to 15 percent in 15 minutes; or although function is greater than these levels, there are objective findings of upper urinary tract disease or dysfunction requiring continuous surveillance and frequent symptomatic treatment.

(4) Loss of upper urinary tract function as evidenced by creatinine clearance of 40 to 60 liters/24 hr. (28 to 42 ml/min) and PSP excretion of 5 percent to 10 percent in 15 minutes; or although function is greater than these levels, there are objective findings of mild or moderate upper urinary tract disease or dysfunction which can be only partially controlled.

(5) Loss of upper urinary tract function as evidenced by creatinine clearance below 40 liters/24 hr. (28 ml/min) and PSP excretion below 5 percent in 15 minutes; or although function is greater than these levels there are objective findings of severe upper urinary tract disease or dysfunction which persists despite continuous treatment.

[Order 74-32, § 296-20-600, filed 6/21/74, effective 10/1/74.]

WAC 296-20-610 Additional permanent impairments of upper urinary tract due to surgical diversion. (1) Rule for evaluation of additional permanent impairments of upper urinary tract due to surgical diversion.

(a) These categories include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-610, filed 6/21/74, effective 10/1/74.]

WAC 296-20-620 Categories of additional permanent impairments of upper urinary tract due to surgical diversion. (1) Uretero-intestinal diversion or cutaneous ureterostomy without intubation.

(2) Nephrostomy or intubated ureterostomy.

[Order 74-32, § 296-20-620, filed 6/21/74, effective 10/1/74.]

WAC 296-20-630 Impairment of bladder function. (1) Rules for evaluation of permanent impairment of bladder function.

(a) In making examinations for evaluation of impairments of bladder function, physicians shall use objective techniques including, but not limited to, cystoscopy, cystography, voiding cystourethrography, cystometry, uroflometry, urinalysis and urine culture.

(b) Categories 2, 3, 4 and 5 include the presence of complaints of whatever degree.

[Order 74-32, § 296-20-630, filed 6/21/74, effective 10/1/74.]

WAC 296-20-640 Categories of permanent impairments of bladder function. (1) No objective findings are present. Subjective complaints may be present or absent.

(2) Objective findings of bladder dysfunction, intermittent treatment required, but there is no dysfunction between such intermittent attacks.

(3) Objective findings of bladder dysfunction, continuous treatment required or there is good bladder reflex activity but no voluntary control.

(4) Objective findings of bladder dysfunction, there is poor reflex activity with intermittent dribbling and no voluntary control.

(5) Objective findings of bladder dysfunction, there is no reflex or voluntary control and there is continuous dribbling.

[Order 74-32, § 296-20-640, filed 6/21/74, effective 10/1/74.]

WAC 296-20-650 Anatomical or functional loss of testes. (1) Rule for evaluation of permanent anatomical or functional loss of testes.

(a) Categories 2, 3, 4 and 5 include the presence of whatever complaints.

[Order 74-32, § 296-20-650, filed 6/21/74, effective 10/1/74.]

WAC 296-20-660 Categories of permanent anatomical or functional loss of testes. (1) No objective findings. Subjective complaints may be present or absent.

(2) Anatomical or functional loss of one testicle.

(3) Anatomical or functional loss of both testes after the age of 65.

(4) Anatomical or functional loss of both testes between the ages of 40 and 65.

(5) Anatomical or functional loss of both testes before the age of 40.

[Order 74-32, § 296-20-660, filed 6/21/74, effective 10/1/74.]

WAC 296-20-670 Disability. (1) The rules for determining disability are as follows:

(a) The determination of the percentage of disability in terms of total bodily impairment for any category is solely an administrative function and shall be done only in accordance with the tables of disability listed in WAC 296-20-680 and 296-20-690, or as otherwise provided in this chapter.

(b) When the industrial injury or occupational disease has caused further impairment to a bodily area where permanent bodily impairment existed prior to the industrial injury or occupational disease, the department shall award the percentage difference between the disability for the category of impairment which preexisted the industrial injury or occupational disease and the disability for the category of permanent impairment existing after the industrial injury or occupational disease.

(c) Neither the combined values chart provided in the guides to the evaluation of permanent impairment nor any other formula for the combination of the disabilities to different body areas or organ systems used in any other nationally recognized guide for determining bodily impairments shall be applied in computing the amount of disabilities to be awarded under these rules.

(d) Except as otherwise specifically provided, a percentage of total bodily impairment in one body area or system shall not be added to or combined with a percentage of total bodily impairment from another body area or system; the percentages for each body area or system shall be stated separately.

[Order 74-32, § 296-20-670, filed 6/21/74, effective 10/1/74.]

WAC 296-20-680 Classification of disabilities in proportion to total bodily impairment.

(1) Permanent Cervical and Cervico-Dorsal Impairments

Category	1	0%
	2	10%
	3	20%
	4	25%
	5	35%

(2) Permanent Dorsal Region Impairments

Category	1	0%
	2	10%
	3	20%

(3) Permanent Dorso-Lumbar and Lumbosacral Impairments

Category	1	0%
	2	5%
	3	10%
	4	15%
	5	25%
	6	40%
	7	60%
	8	75%

(4) Permanent Impairments of the Pelvis

Category	1	0%
	2	2%
	3	5%
	4	5%
	5	5%
	6	5%
	7	10%
	8	10%
	9	15%

(5) Permanent Convulsive Neurologic Impairments

Category	1	0%
	2	10%
	3	35%
	4	60%

(6) Permanent Mental Health Impairments

Category	1	0%
	2	10%
	3	25%
	4	45%
	5	70%

(7) Permanent Cardiac Impairments

Category	1	0%
	2	10%
	3	20%
	4	35%
	5	50%
	6	65%

(8) Permanent Respiratory Impairments

Category	1	0%
	2	15%
	3	25%
	4	40%
	5	65%

(9) Permanent Air Passage Impairments

Category	1	0%
	2	5%
	3	15%
	4	25%
	5	35%
	6	60%

(10) Permanent Air Passage Impairments Due to Nasal Septum Perforations

Category	1	0%
	2	2%

(11) Permanent Loss of Taste and Smell

Category	1	3%
	2	3%

(12) Permanent Speech Impairments

Category	1	0%
	2	5%
	3	10%
	4	20%
	5	30%
	6	35%

(13) Permanent Skin Impairments

Category	1	0%
	2	5%
	3	10%
	4	25%
	5	40%
	6	60%

(14) Permanent Impairments of Upper Digestive Tract, Stomach, Esophagus or Pancreas

Category	1	0%
	2	5%
	3	10%
	4	35%
	5	60%

(15) Permanent Impairments of Lower Digestive Tract

Category	1	0%
	2	5%
	3	15%
	4	30%

(16) Permanent Impairments of Anal Function

Category	1	0%
	2	5%
	3	15%
	4	25%

(17) Permanent Impairments of Liver and Biliary Tract

Category	1	0%
	2	5%
	3	20%
	4	40%
	5	60%

(18) Permanent Impairments of the Spleen, Loss of One Kidney, and Surgical Removal of Bladder with Urinary Diversion

Category	1	15%
	2	10%
	3	20%

(19) Permanent Impairments of Upper Urinary Tract

Category	1	0%
	2	10%
	3	25%
	4	45%
	5	65%

(20) Additional Permanent Impairments of Upper Urinary Tract Due to Surgical Diversion

Category	1	10%
	2	15%

(21) Permanent Impairments of Bladder Function

Category	1	0%
	2	10%
	3	20%
	4	30%
	5	50%

(22) Permanent Anatomical or Functional Loss of Testes

Category	1	0%
	2	5%
	3	10%
	4	25%
	5	35%

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-20-680, filed 12/23/80, effective 3/1/81; Order 74-32, § 296-20-680, filed 6/21/74, effective 10/1/74.]

WAC 296-20-690 Permanent impairments of the cervico-dorsal (WAC 296-20-240) and lumbosacral regions (WAC 296-20-280) jointly.

(1) Permanent Cervical and Cervicodorsal Impairment Category 1 Plus Permanent Dorsolumbar and Lumbosacral Impairment

Category	1	0%
	2	5%
	3	10%
	4	15%
	5	25%
	6	40%
	7	60%
	8	75%

(2) Cervical-Cervicodorsal Category 2 Plus Dorsolumbar-Lumbosacral

Category	1	10%
	2	15%
	3	20%
	4	25%
	5	35%
	6	50%
	7	70%
	8	75%

(3) Cervical-Cervicodorsal Category 3 Plus Dorsolumbar-Lumbosacral

Category	1	20%
	2	25%
	3	30%
	4	35%
	5	45%
	6	55%
	7	70%
	8	75%

(4) Cervical-Cervicodorsal Category 4 Plus Dorsolumbar-Lumbosacral

Category	1	25%
	2	30%
	3	35%
	4	40%
	5	45%
	6	55%
	7	70%
	8	80%

(5) Cervical-Cervicodorsal Category 5 Plus Dorsolumbar-Lumbosacral

Category	1	35%
	2	40%
	3	45%
	4	50%
	5	55%
	6	65%
	7	70%
	8	80%

[Order 74-32, § 296-20-690, filed 6/21/74, effective 10/1/74.]

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296-21-128 Special services and billing procedures—Anesthesia.
296-21-130 Calculation of total anesthesia values.

Reviser's note: Chapter 296-21 WAC, filed 9/17/64, was previously codified as WAC 296-21-010 through 296-21-470 entitled, "HOSPITAL, NURSE, LABORATORY MEDICAL AID RULES AND FEE." Such rules were decodified. Apparently these rules were superseded by similar

rules filed 7/20/66 which were published in Supplement #2 (7/1/68) as an appendix to this chapter. The 1966 rules were expressly repealed by Order 68-7 codified herein as chapters 296-20, 296-21, 296-22 and 296-23 WAC.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-21-020 Home or nursing (convalescent) home visits. [Order 68-7, § 296-21-020, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-055 Other services. [Order 70-12, § 296-21-055, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-055, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-060 Specific diagnostic services. [Order 68-7, § 296-21-060, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-21-065 Nonsurgical operating room services. [Order 68-7, § 296-21-065, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

WAC 296-21-010 General information and instructions. Rules and billing procedures pertaining to all practitioners rendering services to injured workers are presented in the GENERAL INFORMATION section beginning with WAC 296-20-010. Some commonalities are repeated here for the convenience of those doctors referring to the medicine section. Definitions and items unique to medicine are also included.

(1) The following procedures are the most frequently recurring and widely variable items of medical care. The time requirements range from the briefest contact to the comprehensive examination of a complex medical problem. The following graduated listing of services is an attempt to reflect the relative values of the time and skills required at the various service levels. The listed values apply only when these services are performed by or under the responsible supervision of a physician. Separate rules and fee structure exist for services provided by other health care practitioners including nurse practitioners and physician's assistants.

(2) SUPPLEMENTAL SKILLS: When warranted, values for the services of two or more physicians will be allowed. Billings for such services must be supported "by report." See WAC 296-20-01002 for by report content information.

(3) CAST ROOM CHARGES: See code 99070 for information.

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-010, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-010, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-010, filed 1/30/74; Order 70-12, § 296-21-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-010, filed 11/27/68, effective 1/1/69.]

WAC 296-21-011 Footnotes.

+ BR: By Report; see WAC 296-20-01002 for detailed information.

@ Listed units represent basic anesthesia value only; add value for time. See WAC 296-21-130 for calculating total anesthesia values.

MEDICINE MODIFIERS

Listed values for most procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate "modifier code number" (including the hyphen) after the usual procedure number. The value should be listed as a single modified total for the procedure. When multiple modifiers are applicable to a single procedure, see modifier code -99.

		Unit Value
-22	UNUSUAL SERVICES: When the services provided are greater than those usually required for the listed procedure, identify by adding this modifier (-22) to the usual procedure number. List modified value. May require report	BR
-26	PROFESSIONAL COMPONENT: The listed values of certain procedures (laboratory, x-ray, specific diagnostic and therapeutic services, etc.) are a combination of a physician component and a technical component. When the physician component is billed separately, identify by adding this modifier (-26) to the usual procedure number.	
-52	REDUCED VALUES: Under certain circumstances, the listed value for a procedure is reduced or eliminated because of ground rules, common practice, or at the physician's election (e.g., the management of a patient in diabetic coma involving detention with patient in critical condition, with spinal tap, gastric lavage, multiple arterial punctures, cutdown, etc.). Under these or similar circumstances, the services provided can be identified by their usual procedure numbers and the use of a reduced value indicated by adding this modifier (-52) to the procedure number. (Use of this modifier provides a means of reporting services at a reduced charge without disturbing usual relative values.)	
-55	POSTOPERATIVE MANAGEMENT ONLY: When one physician performs the postoperative management and another physician has performed the surgical procedure, the postoperative component may be identified by adding the modifier	

		Unit Value
	'–55' to the usual procedure number.	
–56	PREOPERATIVE MANAGEMENT ONLY: When one physician performs the preoperative care and evaluation and another physician performs the surgical procedure, the preoperative component may be identified by adding the modifier '–56' to the usual procedure number.	
–75	CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '–75' to the basic service performed.	
–76	REPEAT PROCEDURE BY SAME PHYSICIAN: The physician may need to indicate that a procedure or service was repeated subsequent to the original service. This circumstance may be reported by adding the modifier '–76' to the repeated service.	
–77	REPEAT PROCEDURE BY ANOTHER PHYSICIAN: The physician may need to indicate that a basic procedure performed by another physician had to be repeated. This situation may be reported by adding modifier '–77' to the repeated service.	
–90	REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by other than the billing physician, the procedure(s) shall be identified by adding this modifier (–90) to the usual single or panel procedure number and shall be billed as charged to the physician.	
–99	MULTIPLE MODIFIERS: Under certain circumstances multiple modifiers may be applicable. Under such circumstances, identify by adding this modifier (–99) to the usual procedure number and briefly indicate the circumstances. Value in accordance with appropriate modifiers	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–21–011, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–21–011, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–011, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–011, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–011, filed 1/30/74.]

WAC 296–21–013 Special services and billing procedures. The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the physician for materials, for his time or that of his employees. These services are generally provided as an adjunct to common medical services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
99000	Handling and/or conveyance of specimen for transfer from the physician's office to a laboratory	6.0
99001	Handling and/or conveyance of specimen for transfer from the patient in other than a physician's office to a laboratory (distance may be indicated)	8.0
99002	Handling, conveyance, and/or any other service in connection with the implementation of an order involving devices (e.g., designing, fitting, packaging, handling, delivery or mailing) when devices such as orthotics, protectives, prosthetics are fabricated by an outside laboratory or shop but which items have been designed, and are to be fitted and adjusted by the attending physician	12.0
	(For routine collection of venous blood, use 36415)	
	(99012 Telephone calls has been deleted. To report, use 99013–99015)	
99013	Telephone call for consultation or medical management; simple or brief, under 15 minutes	5.0
	(e.g., to report on tests and/or laboratory results; to clarify or alter previous instructions; to adjust therapy)	
99014	intermediate, 15 – 30 minutes	10.0
	(e.g., to provide advice to an established patient on a new problem; to initiate therapy that can be handled by telephone; to discuss results of tests in detail)	
99015	lengthy or complex	15.0
	(e.g., lengthy counseling session with anxious or distraught patient; detailed or prolonged discussion with family member regarding seriously ill patient)	
99024	Post–operative follow–up	BR

		Unit Value
	(See WAC 296-22-010)	
99025	Initial (new patient) visit when asterisk (*) surgical procedure constitutes major service at that visit	20.0
99030	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
99040	Completion of certificate of disability card	2.0
99050	Services requested after office hours in addition to basic service	10.0
99052	Services requested between 10:00 p.m. and 8:00 a.m. in addition to basic services provided the office is closed during this period of time	12.0
99054	Services requested on Sundays and holidays in addition to basic services	12.0
99056	Services provided at request of patient in a location other than physician's office which are normally provided in the office	BR
99058	Office services provided on an emergency basis	BR
	(For hospital-based emergency care facility services, see 90500 et seq.)	
99062	Emergency care facility services: When the nonhospital-based physician is in the hospital but is involved in patient care elsewhere and is called to the emergency facility to provide emergency services	8.0
	(For hospital-based emergency care facility services, see 90500 et seq.)	
99064	Emergency care facility services: When the nonhospital-based physician is called to the emergency facility from outside the hospital to provide emergency services; not during regular office hours	25.0
99065	during regular office hours	16.0
99070	Supplies and materials (except spectacles) provided by the physician over and above those usually included with the office visit or other services rendered (list drugs, trays, supplies or materials cast room and/or casting supplies provided). Bill at cost	BR
	(For spectacles, see 92390-92395)	
99080	Special reports as insurance forms, sixty-day report, or the review of medical data to clarify a patient's status—more than the information conveyed in the usual medical communications or standard reporting form at department request (see WAC 296-20-06101 for reporting requirements)	BR
99082	Unusual travel (e.g., transportation and escort of patient) per mile	2.0
99083	Copies of medical records requested by the department or self-insurance or their representative(s), not required to support billing for services rendered, per page	0.2
99084	Maximum allowed per claim	4.6
99085	Physician called on to convey instructions by telephone to hospital emergency room or nurse practitioner clinic—to be paid only to initial attending physician upon completion of report of accident form	12.0
99150	Detention, prolonged, with patient requiring attention beyond usual service (e.g., critically ill patient, 30 minutes or less)	25.0
99151	one hour	50.0

CRITICAL CARE

Critical care includes the care of critically ill patients in a variety of medical emergencies that requires the constant attention of the physician (cardiac arrest, shock, bleeding, respiratory failure, postoperative complications, critically ill neonate). Critical care is usually, but not always, given in a critical care area, such as the coronary care unit, intensive care unit, respiratory care unit, or the emergency care facility. The descriptors for critical care are intended to include cardiopulmonary resuscitation and a variety of services attendant to this procedure as well as other acute emergency situations. Separate procedure codes for services performed during this period, such as placement of catheters, cardiac output measurement, management of dialysis, control of gastrointestinal hemorrhage, electrical conversion of arrhythmia, etc., are excluded when this descriptor is used on a per hour basis. (The physician may list his services separately if he desires.)

		Unit Value
99160	Critical care, initial, including the diagnostic and therapeutic services and direction of care of the critically ill or multiple injured or comatose patient, requiring the prolonged presence of the physician; each hour	100.0
99162	additional 30 minutes	50.0
99165	Monitoring respiration	20.0
99166	Monitoring temperature	20.0

		Unit Value
	(For monitoring cardiac output, see 78470, 93561, 93962)	
	(For monitoring intra-aortic balloon counter pulsation, see 33972)	
	(For subsequent visits, see appropriate critical care visit, 99171-99174 or hospital visits, 90200-90280)	
99170	Gastric intubation, and aspiration or lavage for treatment (e.g., for ingested poisons)	SV
99171	Critical care, subsequent follow-up visit; brief examination, evaluation and/or treatment for same illness	SV
99172	limited examination, evaluation and/or treatment, same or new illness	SV
99173	intermediate examination, evaluation and/or treatment, same or new illness	SV
99174	extended reexamination, reevaluation and/or treatment, same or new illness	SV
	OTHER SERVICES	
99175	Ipecac or similar administration for individual emesis and continued observation until stomach adequately emptied of poison	SV
	(For diagnostic intubation, see 82926-82932, 89130-89141)	
	(For gastric lavage for diagnostic purposes, see 91055)	
99180	Hyperbaric oxygen pressurization; initial	12.0
99182	Subsequent	3.0
99185	Hypothermia; regional	BR
99186	total body	BR
99190	Assembly and operation of pump with oxygenator or heat exchanger (with or without ECG and/or pressure monitoring); each hour	60.0
99191	3/4 hour	45.0
99192	1/2 hour	30.0
99195	Phlebotomy, therapeutic (separate procedure)	20.0
99199	Unlisted special service or report	BR
	(For monitoring cardiac output, see 78470, 93561, 93962)	
	(For monitoring intra-aortic balloon counterpulsation, see 33972)	
	(For subsequent visits, see appropriate hospital visits, 90200-90280)	
	(For physicians assigned to critical care units or other long-term attendance, use special reports)	

DEFINITIONS

Definitions and items of commonality.
Terms and phrases common to the practice of medicine are defined as follows and apply to procedures 90000 through 90696.

(1) NEW PATIENT: A patient who is new to the physician or a known patient with a new industrial injury or condition, and whose medical and administrative record need to be established.

(2) ESTABLISHED PATIENT: A patient known to the physician and/or whose records are usually available.

(3) INITIAL VISIT: Initial care, including physical examination and initiation of diagnostic and treatment program, for a condition regardless of whether the patient is known to the physician.

(4) FOLLOW-UP VISIT: Subsequent care for a patient and condition known to the physician.

(5) CONSULTATION: A consultation includes services rendered by a physician whose opinion or advice is requested by a physician or other appropriate source for the further evaluation and/or management of the patient. When the consulting physician assumes responsibility for the continuing care of the patient, any subsequent service rendered by him will cease to be a consultation. The consulting physician cannot assume care without the concurrence of the patient or the referring doctor. See WAC 296-20-051. Five levels of consultation are recognized: Limited, intermediate, extensive, comprehensive, and consultation of complexity. See WAC 296-21-030 for description.

(6) REFERRAL: (Transfer) A referral is the transfer of the total or specific care of a patient from one physician to another and does not constitute a consultation. Initial evaluation and subsequent services are designated as listed below in levels of service.

(7) INDEPENDENT PROCEDURE: Certain listed procedures are commonly undertaken as an integral part of a total service. When such a procedure is undertaken as a separate entity, the designation "independent procedure" is appropriate. For example: A patient being seen in consultation by an ophthalmologist and it is necessary for him to perform a gonioscopy or a ophthalmoscopy with intravenous fluorescein as diagnostic procedures in connection with the consultation, then they would be considered as independent procedures. Another example would be cardiac monitoring with electronic equipment in intrathoracic or other critical surgery.

(8) LEVELS OF SERVICE: Examinations, evaluations, treatment, counseling, conferences with or concerning patients, and services which necessitate wide variations in skill, effort and time required for the diagnosis and treatment of illness and the promotion of optimal health. Six levels are recognized:

MINIMAL: A level of service including injections, dressings, minimal care, etc., not necessarily requiring the presence of the physician.

For example:

(a) Routine immunization for tetanus administered by a nurse.

(b) Blood pressure determination by a nurse for medication control.

(c) Removal of sutures from laceration.

BRIEF: A level of service requiring a brief period of time, with minimal effort by the physician.

For example:

(a) Certification of time loss in a stable or chronic case.

(b) Reexamination of minor trauma (e.g., contusion or abrasion).

(c) Examination of conjunctiva by the physician in a patient with subconjunctival hemorrhage, irrigation, medication and removal of foreign body with instrument.

(d) Review of interval history, physical status, and adjustment of medication in patient with compensated arteriosclerotic heart disease on chronic diuretic therapy.

LIMITED: A level of service requiring limited effort or judgment, such as abbreviated or interval history, limited examination or discussion of findings and/or treatment.

For example:

(a) Review and examination of uncomplicated sprains and strains with initiation, continuation and/or change of treatment.

(b) Examination of an extremity fracture not requiring reduction.

(c) Post–operative care in instances where the unit value is for surgical procedure only.

INTERMEDIATE: A level of service such as a complete history and physical examination of one or more organ systems, complicated with a new diagnostic or management problem not necessarily relating to the primary diagnosis that necessitates the obtaining and evaluation of pertinent history and physical or mental status findings, diagnostic tests and procedures, and the ordering of appropriate therapeutic management or an in depth counseling or discussion of the findings, but not requiring a comprehensive examination of the patient as a whole.

For example:

(a) Review of interval history; examination of neck veins, lungs, heart, abdomen and extremities, discussion of findings and prescription of treatment in decompensated arteriosclerotic heart disease.

(b) Review of interval history, examination of musculoskeletal system, discussion of findings, and adjustment of therapeutic program in low back and/or arthritic disorders.

(c) Review of recent illness: Examination of pharynx, neck, axilla, groin, and abdomen; interpretation of laboratory tests and prescription of treatment in infectious mononucleosis.

(d) Evaluation of a chest, post trauma, with impaired respiration with development of shock.

EXTENDED: A level of service requiring an unusual amount of effort or judgment with report to include a detailed history, review of medical records, examination, conclusions of x–ray or laboratory studies, diagnosis and recommendations for treatment, and a formal conference with patient or family. This service may, or may not involve a complete examination of the patient as a whole.

For example:

(a) Re–examination of neurological findings, detailed review of hospital studies and course, and formal conference with patient and family jointly concerning findings and plans in a diagnostic problem of suspected intracranial disease in a young adult.

(b) Detailed intensive review of studies and hospital course and thorough reexamination of pertinent physical findings of a patient with a recent coronary infarct with complications requiring constant physician bedside attention.

(c) Review of results of diagnostic evaluation, performance of a detailed examination and a thorough discussion of physical findings, laboratory studies, x–ray examinations, diagnostic conclusions and recommendations for treatment of complicated chronic pulmonary disease.

(d) Detailed review of studies and hospital course and thorough reexamination of pertinent physical findings of a patient with a recent coronary infarct and formal conference with patient or family to review findings and prognosis.

(e) Reevaluation of a psychotic delusional patient who develops severe and acute abdominal pain involving a mental status reassessment but not a psychiatric diagnostic interview, and a conference with the consulting surgeon and nursing personnel.

(f) Detailed intensive review of studies and hospital course and thorough reexamination of pertinent findings of a patient with a recently diagnosed uterine adenocarcinoma who also has a pulmonary coin lesion under consideration for thoracotomy; this service involves several abbreviated conferences with consultants, and family or patient.

COMPREHENSIVE: A level of service providing an in depth evaluation of the patient with a new or existing problem requiring the development or complete reevaluation of medical data. This procedure includes the recording of a chief complaint(s), and present illness, family history, past medical history, personal history, system review, a complete physical examination, and the ordering of appropriate diagnostic tests and procedures.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-013, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-013, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-013, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-013, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-21-013, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-013, filed 1/30/74.]

WAC 296-21-014 Unlisted service or procedure. A service or procedure may be provided that is not listed in

this fee schedule. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296-21-01401 below. The "unlisted procedures" and accompanying codes for MEDICINE are as follows:

90699 Unlisted medical service, general
90749 Unlisted immunization procedure
90799 Unlisted therapeutic injection
90899 Unlisted psychiatric service or procedure
90999 Unlisted dialysis procedure
92499 Unlisted ophthalmological service
92599 Unlisted otorhinolaryngological service or procedure
93799 Unlisted cardiovascular service or procedure
94799 Unlisted pulmonary service or procedure
94899 Unlisted neurological service or procedure
95199 Unlisted allergy/clinical immunological service or procedure
95999 Unlisted miscellaneous diagnostic service or procedure
96999 Unlisted special dermatological service or procedure
97799 Unlisted physical medicine service or procedure

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-014, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-014, filed 11/24/76, effective 1/1/77.]

WAC 296-21-01401 Special report. A service that is rarely provided, unusual, variable, or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure; and the time, effort, and equipment necessary to provide the service. Additional items which may be included are: Complexity of symptoms, final diagnosis, pertinent physical findings, diagnostic and therapeutic procedures, concurrent problems, and follow-up care.

[Order 76-34, § 296-21-01401, filed 11/24/76, effective 1/1/77.]

WAC 296-21-015 Office visits.

		Unit Value
Initial visit		
90000	BRIEF evaluation, history, examination and/or treatment and submission of a report	20.0
90001	Completion of report of accident	12.0
90010	Initial LIMITED history and physical examination, including initiation of diagnostic and treatment program and submission of a report. (Routine visit involving a single region or organ system)	30.0
90015	Initial INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and submission of a report. (Serious or complicated case involving one or more regions or organ systems. Complexity or complication must be indicated in report)	50.0
90017	Extended-initial office visit including history and physical exam, and initiation of treatment program with submission of a report in addition to the report of accident	60.0
90020	Initial COMPREHENSIVE history and physical examination, including initiation of diagnostic and treatment program with submission of a report in addition to the report of accident. (A complex case requiring an unusual amount of time, skill or judgment and an evaluation of the patient as a whole and accompanied with a detailed report)	70.0
Follow-up visits		
90030	MINIMAL service (e.g., Injection, immunization, minimal dressing) (Independent procedure)	8.0
90040	BRIEF examination, evaluation and/or treatment with office notes	12.0
90050	LIMITED examination, evaluation and/or treatment with office notes.	16.0
90060	INTERMEDIATE examination, evaluation and/or treatment. (Serious or complicated case involving one or more regions and/or organ systems, and accompanied with a detailed report)	20.0
90070	EXTENDED reexamination or reevaluation requiring an unusual amount of time, skill or judgment, but not necessitating a complete examination or reexamination of the patient as a whole accompanied by a detailed report	30.0
90080	COMPREHENSIVE reexamination or reevaluation requiring complete reevaluation of the patient as a whole accompanied by a detailed report	50.0
90097	Completion of a reopening application. An initial office visit fee will be paid for this reopening examination when justified by a report. Diagnostic studies and x-ray studies associated with the reopening examination will be allowed in addition to this fee	12.0

(For special narrative reports, at department or self-insurer request, see code 99080.)

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-015, filed

11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-015, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-015, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-015, filed 1/30/74; Order 71-6, § 296-21-015, filed 6/1/71; Order 68-7, § 296-21-015, filed 11/27/68, effective 1/1/69.]

WAC 296-22-020 Skin, subcutaneous and areolar tissues.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*10000	Incision and drainage of infected or noninfected subaceous cyst; one lesion	*0.4	0	3.0
10001	second lesion	0.2		3.0
10002	more than two lesions	0.1		3.0
10003*	Incision and drainage of infected or noninfected epithelial inclusion cyst ("sebaceous cyst") with complete removal of sac and treatment of cavity	.8	0	3.0
	(For excision, see 11400, et seq.)			
*10020	Incision and drainage of furuncle	*0.4	0	3.0
*10040	Acne surgery: (e.g., marsupialization, opening, or removal of multiple milia, comedones, cysts, pustules)	*0.3	0	3.0
*10060	Incision and drainage of abscess (e.g., carbuncle, suppurative hidradenitis, and other cutaneous or subcutaneous abscesses); simple	0.4	0	3.0
10061	complicated	BR+		3.0
*10080	Incision and drainage of pilonidal cyst; simple	*0.4	0	3.0
10081	complicated	BR+		3.0
	(For excision of pilonidal cyst, see 11770-11772)			
*10100	Incision and drainage of onychia or paronychia, single or simple	*0.4	0	3.0
10101	multiple or complicated	BR+		3.0
*10120	Incision and removal of foreign body, subcutaneous tissues; simple	*0.4	0	3.0
10121	complicated	BR+		3.0
*10140	Incision and drainage of hematoma, simple	*0.4	0	3.0
10141	complicated	BR+		3.0
*10160	Puncture aspiration of abscess, hematoma, bulla, or cyst	*0.3	0	3.0
10180	Incision and drainage, complex, postoperative wound infection	BR		3.0
	(For secondary closure of surgical wound, see 12020, 12021, 13160)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-020, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-020, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-020, filed 1/30/74; Order 68-7, § 296-22-020, filed 11/27/68, effective 1/1/69.]

WAC 296-21-025 Hospital visits.

		Unit Value
New or established patients		
90200	Initial hospital care, BRIEF or LIMITED history and physical examination, including initiation of diagnostic and treatment program, preparation of hospital records. (Routine visit involving a single region or organ system)	30.0
90215	Initial hospital care, INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and preparation of hospital records. (Serious or complicated case involving one or more regions and/or organ systems and indicated in a report)	50.0
90220	Initial hospital care, COMPREHENSIVE history and physical examination, including initiation of diagnostic and treatment program and preparation of hospital records. (A complex case requiring an unusual amount of time, skill or judgment and evaluation of the patient as a whole accompanied by a detailed report in addition to the report of accident)	70.0
Follow-up visits		
90240	BRIEF examination, evaluation and/or treatment, same illness. (Follow-up hospital care)	12.0
90250	LIMITED examination, evaluation and/or treatment. Report required. (Routine follow-up hospital care)	20.0
90260	INTERMEDIATE examination, evaluation and/or treatment. Report required. (Serious or complicated case involving one or more regions or organ systems)	30.0
90270	EXTENDED reexamination or reevaluation, requiring an unusual amount of time, skill or judgment, but not necessitating a complete examination or reevaluation of the patient as a whole accompanied by a report	40.0
90280	Comprehensive examination, evaluation or treatment. Report required.	50.0
90292	Hospital discharge day management accompanied by a report	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-025, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-025, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-025, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-025, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-025, filed

1/30/74; Order 70-12, § 296-21-025, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-025, filed 11/27/68, effective 1/1/69.]

WAC 296-21-026 Extended care facility, convalescent hospital, and nursing home. Convalescent, rehabilitation or long-term care services.

Convalescent, rehabilitative or long-term care involves active, definitive, professional care of a patient.

		Unit Value
New or established patient		
90300	Initial care, BRIEF or LIMITED history and physical examination, including initiation of diagnostic and treatment program and preparation of records. (Routine visit involving a single region or organ system)	30.0
90315	Initial care, INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and preparation of records. (Serious or complicated case involving one or more regions and/or organ systems)	50.0
90320	Initial care, COMPREHENSIVE history and physical examination, including initiation of diagnostic and treatment program and preparation of records. (A complex case involving an unusual amount of time, skill or judgment and an evaluation of the patient as a whole accompanied by a detailed report)	70.0
90340	BRIEF examination, evaluation and/or treatment, same illness	12.0
90350	LIMITED examination, evaluation and/or treatment. (Routine followup care)	20.0
90360	INTERMEDIATE examination, evaluation and/or treatment. (Serious or complicated case involving one or more regions and/or organ systems)	30.0
90370	EXTENDED examination, evaluation and/or treatment requiring an unusual amount of time, skill or judgment but not necessitating a complete evaluation of the patient as a whole	40.0

[Order 76-34, § 296-21-026, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-026, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-026, filed 1/30/74.]

WAC 296-21-027 Emergency room service. The following values apply for services performed in the emergency room when the physician is assigned to emergency room duty or is present in the emergency room because of other activity there, or if the physician elects to use the emergency room as a substitute for his office.

		Unit Value
Initial visit		
90500	MINIMAL service (i.e. injection, etc.)	10.0
90505	BRIEF evaluation, history, examination and/or treatment. (Not payable when other fees are payable except as indicated by modifiers)	20.0
90510	Initial LIMITED history and physical examination, including initiation of diagnostic and treatment program. (Routine case involving a single region and/or organ system) (Not payable when other fees are payable except as indicated by modifiers)	30.0
90515	Initial INTERMEDIATE history and physical examination, including initiation of diagnostic and treatment program and submission of a detailed report. (Serious or complicated case involving one or more regions and/or organ systems) (Not payable when other fees are payable except as indicated by modifiers)	50.0
90517	Initial EXTENDED history and physical examination, including initiation of diagnostic and treatment program and submission of a detailed report in addition to the report of accident. (Examination or evaluation requiring an unusual amount of time, skill or judgment) (Not payable when other fees are payable except as indicated by modifiers)	70.0
Follow-up visit		
90530	MINIMAL service (e.g., injection, minimal dressing, suture removal, minor laceration) (Not payable when other fees are applicable except as indicated by modifiers)	8.0
90540	BRIEF examination, evaluation and/or treatment. (Not payable when other fees are applicable except as indicated by modifiers)	12.0
90550	LIMITED examination, evaluation and/or treatment. (Routine follow up care) (Not payable when other fees are applicable except as indicated by modifiers)	16.0
90560	INTERMEDIATE examination, evaluation and/or treatment accompanied by a detailed report. (Case involving one or more regions and/or organ systems) (Not payable when other fees are payable except as indicated by modifiers)	20.0
90570	EXTENDED reexamination or reevaluation and/or treatment requiring	

	Unit Value
an unusual amount of time, skill or judgment but not necessitating evaluation of the man as a whole accompanied by a detailed report. (Not payable when other fees are applicable except as indicated by modifiers)	30.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-027, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-027, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-027, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-027, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-027, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-21-027, filed 1/30/74.]

WAC 296-21-030 Consultations. A CONSULTATION is considered here to include those services rendered by a physician whose OPINION OR ADVICE is requested by another physician or agency in the evaluation and/or treatment of a patient's illness. When the consultant physician thereupon assumes the CONTINUING CARE of the patient, any subsequent service(s) rendered by him will no longer be considered as a consultation. Five levels of consultation are recognized: Limited, intermediate, extensive, comprehensive, and complex consultation.

(For example)

(a) In a LIMITED consultation (90600) the physician confines his service to the examination or evaluation of a single organ system for a limited condition. This procedure includes documentation of the complaint(s), present illness, pertinent examination, review of medical data and establishment of a plan of management relating to the specific problem. For example, the dermatologist's opinion about a skin lesion.

(b) An INTERMEDIATE consultation (90605) involves examination or evaluation of an organ system, a partial review of the general history, recommendations for establishment of a plan of management relating to the specific problem and preparation of a report. An example would be the evaluation of abdomen for possible surgery that does not proceed to surgery, the neurologist's opinion about a disc problem and the orthopedist's opinion about a knee or low back problem.

(c) An EXTENDED/EXTENSIVE consultation (90610) involves the evaluation of problems that do not require a comprehensive evaluation of the patient as a whole. This procedure includes the documentation of a history of the chief complaint(s), past medical history and pertinent physical examination, review and evaluation of the past medical data, recommendations for establishment of a plan of investigative and/or therapeutic management, and the preparation of an appropriate report. For example: The examination of the cardiac patient who needs clearance before undergoing a surgical operation, consultations involving cardio-pulmonary problems and neurologic and orthopedic examinations of patient whose complaints seem disproportionate to his objective findings requiring detailed psychosocial evaluation.

(d) A COMPREHENSIVE consultation (90620) involves an in depth evaluation of a patient with a problem requiring the development and documentation of medical data (the chief complaints, present illness, family history, past medical history, personal history, system review and physical examination, review of all diagnostic tests and procedures that have previously been done), recommendations for the establishment or verification of a plan for further investigative and/or therapeutic management and the preparation of a report. For example: The young person with fever, arthritis and anemia and examination of patient for diagnosis and in depth evaluation of all organ systems for preexisting and/or unrelated nonindustrial conditions; or a comprehensive psychiatric consultation that may include a detailed present illness history, and past history, a mental status examination, exchange of information with primary physician or nursing personnel or family members and other informants, and preparation of a report with recommendations.

(e) The COMPLEX consultation (90630) is an uncommonly performed service that involves an in depth evaluation of a critical problem that requires unusual knowledge, skill and judgment on the part of the consulting physician, and the preparation of an appropriate report with recommendations. An example would be acute myocardial infarction with major complications. Another example would be a young psychotic adult unresponsive to extensive treatment efforts under consideration for residential care, or the paraplegic patient with iatrogenic drug addiction or dependency (condition resulting from treatment).

A REFERRAL is considered here to be the transfer of the total or specific care of a patient from one physician to another. THIS IS NOT A CONSULTATION. Values for the initial visit and the subsequent services for referrals are listed under the appropriate headings in other portions of this schedule.

The values do not necessarily include consultations involving litigation.

		Unit Value
90600	Consultation requiring LIMITED examination and/or evaluation of a given system or region but not requiring a comprehensive history and examination. Report required.	30.0
90605	Intermediate consultation – Consultation requiring intermediate history and physical exam of one or more regions and/or organ system, but not requiring comprehensive history and examination. Requires report.	40.0
90610	Consultation requiring more EXTENSIVE examination and/or evaluation of one or more regions or organ	

		Unit Value
	systems but not requiring comprehensive history and examination. Report required	50.0
90620	Consultation requiring COMPREHENSIVE history, examination and/or evaluation of one or more regions and/or organ systems with report	70.0
90630	Consultation of unusual complexity (in excess of scope of services identified by 90600, 90610 and 90620.) Necessitating exceptionally detailed history and examination with extensive review of prior medical records, completion and assessment of data and the preparation of a special report	95.0

Follow–up consultation

90640	Follow–up consultation; brief visit	16.0
90641	limited visit	20.0
90642	intermediate visit for evaluation	30.0
90643	extended visit requiring reexamination or reevaluation	40.0

Concurring (confirmatory or additional opinion) consultation

This section should be used when the consulting physician is aware of the confirmatory nature of the opinion that is sought, e.g., when a second/third opinion on the necessity or appropriateness of a (previously) recommended medical treatment or surgical procedure is requested.

90650	Confirmatory consultation; limited	30.0
90651	intermediate	40.0
90652	extensive	50.0
90653	comprehensive	70.0
90654	complex	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–21–030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–030, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–030, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–030, filed 1/30/74; Order 70–12, § 296–21–030, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–21–030, filed 11/27/68, effective 1/1/69.]

WAC 296–21–035 Special and commission examinations. Purpose:

Special examinations or commissions may be requested by the department or the attending physician; this is usually for one of the following purposes:

(1) To establish a diagnosis. Prior diagnoses may be controversial or ill–defined.

(2) To outline a basis of rational treatment, where treatment or progress is controversial.

(3) To establish medical data to determine if the medical condition is industrially acquired, or unrelated to industrial work activities.

(4) To determine the extent and duration of aggravation of preexisting medical condition, by an industrial injury or exposure.

(5) To establish when the accepted medical condition has reached maximum benefit from treatment.

(6) To establish a percentage rating of any permanent disability, based on the loss of body function when maximum recovery is reached.

(7) To determine the indications for reopening of a claim for further treatment on basis of aggravation of accepted condition, based on objective findings.

Special examination must be specific and factual if accurate and consistent judgment is to be maintained and the result give justice and uniformity.

The history should be checked for accuracy, variation or exaggeration. Physical findings should be detailed enough to be compatible with the history, diagnosis and conclusions.

Diagnoses: Must be specific and describe the pathology found and be substantiated by the history and physical findings. (Vague terminology only confuses.)

Conclusions: Must be specific and definitely express an opinion on the purpose for which the examination was requested. This should be rationalized with the history, physical findings and diagnosis. (Evasiveness, generalizations and omissions frequently render the report misleading or worthless for the intended purpose.)

Permanent disability: Ratings must be substantiated by sufficient objective findings and medical data to establish the percentage disability rating; also medical logic to demonstrate a definite causal relationship to the accepted industrial conditions on a more probable than not basis.

[Order 74–7, § 296–21–035, filed 1/30/74; Order 68–7, § 296–21–035, filed 11/27/68, effective 1/1/69.]

WAC 296–21–040 Special and closing examinations.

		Unit Value
	Codes 90640, 90650 have been deleted. To report special and closing examinations by the attending physician or single special examiner (see 90678, 90679).	
90678	Special or closing examination, (including examination by the attending physician) requiring the examination and/or evaluation involving loss of function and permanent impairment of a minor nature to a region and/or organ system and requiring a limited history and physical examination	100.0
90679	Special or closing examination, (including examination by the attending physician) requiring more	

		Unit Value
	extensive examination and/or evaluation involving considerable loss of function and permanent impairment to one or more regions and/or organ systems but not requiring a comprehensive history and physical examination	150.0
90694	Special examination of unusual complexity in excess of scope of examination identified by 90678 and 90679 involving extensive loss of function and permanent impairment necessitating complete history and examination and extensive review of prior medical records, compilation and assessment of data and the preparation of an exceptionally detailed report.	BR
90695	Time loss by physician from failure of the worker to appear for a special examination and the physician is unable to see other patients during the time set aside for the special examination, each one-half hour not to exceed two hours	25.0
90696	Conference with department field representative relative to an individual case. (Each fifteen minutes)	16.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-040, filed 2/28/86, effective 4/1/86; Order 75-39, § 296-21-040, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-040, filed 1/30/74; Order 68-7, § 296-21-040, filed 11/27/68, effective 1/1/69.]

WAC 296-21-045 Commission and panel examinations.

		Unit Value
	(90660, 90670 have been deleted. To report see 90675, 90676, 90677.)	
90671	No show commission examination	152.55
90673	No show panel examination	230.94
90674	No show NOP (neurologist, orthopedist, psychiatrist)	305.09
90675	Commission examination requiring examination and/or evaluation involving considerable loss of function and permanent impairment requiring an extremely comprehensive history and physical examination	305.09
90676	Panel examination by three members, not including a psychiatrist, involving extensive loss of function and permanent impairment necessitating complete history and examination and extensive review of prior medical records compilation and assessment of data, and the preparation of an exceptionally detailed report	461.87
90677	Panel examination by three members including a psychiatrist (NOP)	610.17
	(90690 has been deleted. This service is included in 90675-90679.)	
90680	In complicated or controversial cases where voluminous departmental files must be reviewed in connection with a special, commission, or panel examination within the scope of examinations identified by 90675, 90676, 90677, 90678, and 90679 an additional fee will be allowed at the discretion of the department	40.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-045, filed 2/28/86, effective 4/1/86; Order 76-34, § 296-21-045, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-21-045, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-045, filed 1/30/74; Order 71-6, § 296-21-045, filed 6/1/71; Order 68-7, § 296-21-045, filed 11/27/68, effective 1/1/69.]

WAC 296-21-046 Immunization injections.

(For allergy testing, see 95000 et seq.)

(For skin testing of bacterial, viral, fungal extracts, see 86450-86585)

(For therapeutic injections, see 90782-90799)

Immunizations are usually given in conjunction with a medical service. When an immunization is the only service performed, a minimal service may be listed in addition to the injection. Immunization procedures include the supply of materials. Immunizations, except for 90703, require prior authorization.

(Immunization 90720-90723 have been revised as 90701-90742)

		Unit Value
90701	Immunization, active; diptheria and tetanus toxoids and pertussis vaccine (DTP)	8.0
90702	diphtheria and tetanus toxoids (DT)	5.0
90703	tetanus toxoid	6.0
90704	mumps virus vaccine, live	BR
90705	measles virus vaccine, live, attenuated	BR
90706	rubella virus vaccine, live	BR

		Unit Value
90707	measles, mumps and rubella virus vaccine, live	BR
90708	measles and rubella virus vaccine, live	13.0
90709	rubella and mumps virus vaccine, live	BR
90712	polio virus vaccine, live, oral (any type(s))	BR
90713	poliomyelitis vaccine	BR
90714	typhoid vaccine	BR
90717	yellow fever vaccine	BR
90718	tetanus and diptheria toxoids absorbed, for adult use (Td)	5.0
90719	diptheria toxoid	BR
90724	influenza virus vaccine	6.0
90725	cholera vaccine	BR
90726	rabies vaccine	4.0
90727	plague vaccine	BR
90728	BCG vaccine	BR
90731	hepatitis B vaccine	BR
90732	pneumococcal vaccine, polyvalent	BR
90733	meningococcal polysaccharide vaccine (any group(s))	BR
90741	Immunization, passive; immune serum globulin, human (ISG)	BR
90742	specific hyperimmune serum globulin (e.g., hepatitis B, measles, pertussis, rabies, Rho(D), tetanus, vaccinia, varicella–zoster)	BR
90749	Unlisted immunization procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-046, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-046, filed 8/2/83.]

WAC 296-21-047 Therapeutic injections.

(For cost of drugs supplied by physician, see 99070)

(For injections performed as an independent procedure, see 90030)

(For allergy testing, see WAC 296-21-075)

(For skin testing, see 86450–86585)

		Unit Value
90782	Therapeutic injection of medication (specify); subcutaneous or intramuscular	6.0
90784	intravenous	8.0
90788	Intramuscular injection of antibiotic (specify)	6.0
	(Chemotherapy procedures 90790–90796 have been deleted. To report, use 96500–96549)	
90798	Intravenous therapy for severe or intractable allergic disease in physician's office or institution with theophyllines, corticosteroids, antihistamines	11.0
90799	Unlisted therapeutic injection	BR

(For allergy immunizations, see 9500 et seq.)

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-21-047, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-047, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-047, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-047, filed 1/30/74.]

WAC 296-21-050 Psychiatric services.

NOTES

Hospital care by the attending physician in treating a psychiatric inpatient may be initial or subsequent in nature (see 90200–90280) and may include exchanges with nursing and ancillary personnel. Hospital care services involve a variety of responsibilities unique to the medical management of inpatients, such as physician hospital orders, interpretation of laboratory or other medical diagnostic studies and observations, review of activity therapy reports, supervision of nursing and ancillary personnel, and the programming of all hospital resources for diagnosis and treatment. Some patients receive hospital care services only and others receive hospital care services and other procedures. If other procedures such as electroconvulsive therapy or medical psychotherapy are rendered in addition to hospital care services, these should be listed separately (i.e., hospital care service plus electroconvulsive therapy or plus medical psychotherapy if rendered).

Psychiatric care may be reported without time dimensions according to the procedure or service as are other medical or surgical procedures. In reporting medical psychotherapy procedures, time is only one aspect and may be expressed as is customary in the local area. For example, the usual appointment length of an individual medical psychotherapy procedure may be signified by the procedure code alone. The modifier '–52' may be used to signify a service that is reduced or less extensive than the usual procedure. The modifier '–22' may be used to indicate a more extensive service. Thus medical psychotherapy procedures may be reported by the procedure code alone or by the procedure code with a modifier. If appropriate and customary in the local area, codes 90841, 90843 or 90844 may be used.

Other medical services, such as 90050—Limited office medical service or other patient encounters, may be described as listed in the section on medicine if appropriate).

CONSULTATION

Consultation for psychiatric evaluation of a patient. Includes examination of patient and exchange of information with primary physician and other informants such as nurses or family members, and preparation of report. Apply to consultations as listed in the section on medicine. (90600–90630) (See also definition of consultation)

GENERAL CLINICAL PSYCHIATRIC DIAGNOSTIC OR EVALUATIVE INTERVIEW PROCEDURES

		Unit Value	Basic Anes@
90801	Psychiatric diagnostic interview examination including history, mental status, or disposition (may include communication with family or other sources, ordering and medical interpretation of laboratory or other medical diagnostic studies; in certain circumstances other informants will be seen in lieu of the patient). Report required	70.0	

SPECIAL CLINICAL PSYCHIATRIC DIAGNOSTIC OR EVALUATIVE PROCEDURE

90825	Psychiatric evaluation of hospital records, other psychiatric reports, psychometric and/or projective tests, and other accumulated data for medical diagnostic purposes (without other informants or patient interview)	30.0	
90830	Psychological testing by physician, with written report, per hour	BR	
90831	Telephone consultation with or about patient for psychiatric therapeutic or diagnostic purposes	20.0	
90835	Narcosynthesis for psychiatric diagnostic and therapeutic purposes, e.g., sodium amobarbital (Amytal) interview	50.0	
90840	Psychologic testing, psychometric and/or projective tests, with written report, given by or under supervision of physician, per hour	45.0	

PSYCHIATRIC THERAPEUTIC PROCEDURES
MEDICAL PSYCHOTHERAPY

90841	Individual medical psychotherapy with continuing medical diagnostic evaluation, and drug management when indicated, including psychoanalysis, insight oriented, behavior modifying or supportive psychotherapy; each 15 minutes with report	20.0	
90843	approximately 20 TO 30 minutes with report	42.4	
90844	approximately 45 OR 50 minutes with report	70.0	
90847	Family medical psychotherapy (conjoint psychotherapy)	50.0	
	(90848 has been deleted. To report use 90847)		
90849	Multiple–family group medical psychotherapy Report required.	50.0	
90850	Inpatient care including psychotherapy and supervision of milieu team (e.g., occupational therapy, psychiatric nursing, etc.) or conference with family, 50 minutes, with report	70.0	
90851	25 minutes, with report	45.0	
90852	15 minutes, with report	20.0	
90853	Group medical psychotherapy (other than of a multiple–family group) Report required.	50.0	

PSYCHIATRIC SOMATOTHERAPY

90862	Chemotherapy management, including prescription, use, and review of medication with no more than minimal medical psychotherapy, per hour	60.0	
90870	Electroconvulsive therapy (includes necessary monitoring); single seizure	50.0	
90871	Multiple seizures, per day	75.0	
	(90872 Subconvulsive shock treatment has been deleted. To report use 90899)		

OTHER PSYCHIATRIC THERAPY

90880	Medical hypnotherapy	35.0	
90882	Environmental intervention for medical management purposes on a psychiatric patient's behalf with agencies, employers, or institutions	30.0	
90887	Interpretation or explanation of results of psychiatric, other medical examinations and procedures, or other accumulated data to family or other responsible persons, or advising them how to assist patient	30.0	

		Unit Value	Basic Anes@
90889	Preparation of report of patient's psychiatric status, history, treatment, or progress (other than for legal or consultative purposes) for other physicians, agencies, or insurance carriers	50.0	

(For psychiatric consultation see 90600–90630)

90898	If a claimant fails to appear for the initial psychiatric treatment interview and the psychiatrist, through investigation, including contact with the patient, files a useful report including recommendations, he is entitled to a full hour's fee	70.0	

OTHER PROCEDURES

90899	Unlisted psychiatric service or procedure	BR	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-050, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-050, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-050, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-050, filed 1/30/74; Order 68-7, § 296-21-050, filed 11/27/68, effective 1/1/69.]

WAC 296-21-0501 Biofeedback rules. Procedures listed under WAC 296-20-0502 are for use by M.D.'s, D.O.'s, and certified psychologists. Procedures listed under WAC 296-23-910 are for use by certified registered nurses. RPT's and LPT's must use rules and procedures listed under WAC 296-23-710 through 296-23-725.

Administration of biofeedback treatment is limited to those practitioners who are certified by the Biofeedback Certification Institute of America or who meet the minimum education, experience, and training qualifications to be so certified. Those practitioners wishing to administer biofeedback treatment to injured workers, must submit a copy of their biofeedback certification or supply evidence of their qualifications to the department of self-insurer as the case may be.

(1) The department will authorize biofeedback treatment for the following conditions when accepted under the industrial insurance claim:

(a) Idiopathic Raynaud's disease

(b) Temporomandibular joint dysfunction

(c) Myofascial pain dysfunction syndrome (MPD)

(d) Tension headaches

(e) Migraine headaches

(f) Tinnitus

(g) Torticollis

(h) Neuromuscular reeducation as result of neurological damage in CVA or spinal cord injury

(i) Inflammatory and/or musculoskeletal disorders causally related to the accepted condition.

(2) Twelve biofeedback treatments in a ninety day period will be authorized for the above conditions when the following is presented:

(a) An evaluation report documenting:

(i) The basis for the claimant's condition;

(ii) the condition's relationship to the industrial injury;

(iii) an evaluation of the claimant's current functional measurable modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.);

(iv) an outline of the proposed treatment program;

(v) an outline of the expected restoration goals.

(b) No further biofeedback treatments will be authorized or paid for without substantiation of evidence of improvement in measurable, functional modalities (i.e., range of motion, up time, walking tolerance, medication intake, etc.). Only one additional treatment block of twelve treatments per ninety days will be authorized. Requests for biofeedback treatment beyond twenty-four treatments or one hundred eighty days will be granted only after file review by and on the advice of the department's medical consultant.

(c) In addition to treatment, pretreatment and periodic evaluation will be authorized. Follow-up evaluation can be authorized at one, three, six, and twelve months posttreatment.

(d) At the department's option, a concurring opinion may be required regarding relationship of the condition to the industrial injury and/or need for biofeedback treatment.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-21-0501, filed 10/1/86, effective 11/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-0501, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-0501, filed 12/23/80, effective 3/1/81.]

WAC 296-21-0502 Biofeedback.

		Unit Value
90900	Biofeedback training, by electromyogram application including office visit (one hour)	50.0
90901	Biofeedback training, by electromyogram application (one-half hour)	30.0
90902	in conduction disorder including office visit (one hour)	50.0
90903	in conduction disorder (one-half hour)	30.0
90904	regulation of blood pressure including office visit (one hour)	50.0
90905	regulation of blood pressure (one-half hour)	30.0
90906	regulation of skin temperature or peripheral blood flow including office visit (one hour)	50.0

		Unit Value
90907	regulation of skin temperature or peripheral blood flow (one–half hour)	30.0
90908	by electroencephalogram application including office visit (one hour)	50.0
90909	by electroencephalogram application (one–half hour)	30.0
90910	by electro–oculogram application including office visit (one hour)	50.0
90911	by electro–oculogram application (one–half hour)	30.0
90912	Diagnostic evaluation includes report (one hour)	60.0
90913	Follow–up evaluation includes report (one–half hour)	30.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–20–074 (Order 86–36), § 296–21–0502, filed 10/1/86, effective 11/1/86; 86–06–032 (Order 86–19), § 296–21–0502, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–01–100 (Order 80–29), § 296–21–0502, filed 12/23/80, effective 3/1/81.]

WAC 296-21-057 Monitoring services. The following values are for physician's services only and do not include charges for use of equipment or supplies.

		Unit Value
	Dialysis	
	HEMODIALYSIS	
	(For cannula declotting, see 36860, 36861)	
90941	Hemodialysis, acute renal failure or intoxication, per dialysis	BR+
90942	patient 21–40 kg	BR
90943	patient 11–20 kg	BR
90944	patient under 10 kg	BR
90951	Hemodialysis, for chronic irreversible renal insufficiency, initial stabilizing therapy via shunt or fistula, up to 4–6 weeks; patient over 40 kg	BR
90952	patient 21–40 kg	BR
90953	patient 11–20 kg	BR
90954	patient under 10 kg	BR
90955	Hemodialysis, for chronic irreversible renal insufficiency, maintenance for stabilized condition, more than 4–6 weeks, hospital, patient over 40 kg	BR
90956	patient 21–40 kg	BR
90957	patient 11–20 kg	BR
90958	patient under 10 kg	BR
	PERITONEAL DIALYSIS	
	(For insertion of cannula or catheter, see 49420, 49421)	
90966	Peritoneal dialysis for acute renal failure and/or intoxication, excluding catheter/cannula insertion; patient more than 40 kg	BR
90967	patient 21–40 kg	BR
90968	patient 11–20 kg	BR
90969	patient under 10 kg	BR
90976	Peritoneal dialysis for chronic renal failure; patient more than 40 kg	BR
90977	patient 21–40 kg	BR
90978	patient 11–20 kg	BR
90979	patient under 10 kg	BR
	MISCELLANEOUS DIALYSIS PROCEDURES	
90990	Hemodialysis training and/or counseling	BR
90991	Home hemodialysis care, outpatient, for those services either provided by the physician primarily responsible for total hemolysis care or under his direct supervision, and excludes care for complicating illnesses unrelated to hemodialysis	BR
90997	Hemoperfusion (e.g., with activated charcoal or resin)	BR
90999	Unlisted dialysis procedure	BR
	(For cannula insertion by other than treating physician, see 49420)	
	GASTROENTEROLOGY	
	(For duodenal intubation and aspiration, see 89100–89105)	
	(For gastrointestinal radiologic procedures, see 74210–74340)	
91000	Esophageal intubation and collection of washings for cytology, including preparation of specimens (separate procedure)	36.0
91010	Esophageal motility study;	106.0
91011	with mecholyl or similar stimulant	130.0
91012	with acid perfusion studies	72.0
91030	Esophagus, acid perfusion (Bernstein) test for esophagitis	36.0

		Unit Value
91032	Esophagus, acid reflux test, with intraluminal pH electrode for detection of gastroesophageal reflux	72.0
91033	prolonged recording	BR
91052	Gastric analysis test with injection of stimulant of gastric secretion (e.g., histamine, insulin, pentagastrin)	BR
	(For gastric biopsy by capsule, per oral, via tube, one or more specimens, see 43600)	
	(For gastric laboratory procedures, see also 89130–89141)	
91055	Gastric intubation, washings, and preparing slides for cytology (separate procedure)	36.0
	(For gastric lavage, therapeutic, see 99170)	
91060	Gastric saline load test	30.0
	(For biopsy by capsule, small intestine, per oral, via tube (one or more specimens), see 44100)	
91090	Fluorescein–string test for upper gastrointestinal bleeding	30.0
91100	Intestinal bleeding tube, passage, positioning and monitoring	BR
	(For injection procedure for percutaneous transhepatic cholangiography, see 47500)	
	(For cholangiography, see 74320, 74321)	
	(For abdominal paracentesis, see 49080, 49081; with instillation of medication, see 90793)	
	(For peritoneoscopy, see 49300; with biopsy, see 49301)	
	(For peritoneoscopy and guided transhepatic cholangiography, see 49302; with biopsy, see 49303)	
	(For injection procedure for splenoportography, see 38200)	
91122	Anorectal manometry	BR
91299	Unlisted diagnostic gastroenterology procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–21–057, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–057, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–057, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–057, filed 1/30/74.]

WAC 296-21-062 Eye.

OPHTHALMOLOGICAL DIAGNOSTIC AND TREATMENT SERVICES

(For surgical procedures, see surgery, eye and ocular adnexa, 65091 et seq.)

NOTES

REPORTING

See guidelines in MEDICINE section WAC 296–21–010 and special ophthalmology notations below.

To report MINIMAL, BRIEF, AND LIMITED office services, use descriptors from the general medical section (90000 et seq.)

To report INTERMEDIATE, COMPREHENSIVE AND SPECIAL services, use the specific ophthalmological descriptors (92002 et seq.)

To report CONSULTATIONS, wherever performed, use descriptors from the general medical section (90600 et seq.)

To report HOME, HOSPITAL, EMERGENCY DEPARTMENT and other institutional medical services, use the descriptors from the general medical section (90200 et seq.) unless specific ophthalmological descriptors (92002 et seq.) are more appropriate.

To report surgical services, see SURGERY, EYE and OCULAR ADNEXA (65091 et seq.) and surgical guidelines WAC 296–22–010.

DEFINITIONS

MINIMAL MEDICAL SERVICE: A level of service supervised by a physician but not necessarily requiring his presence.

For example:

Visual acuity check or verification of lenses.

BRIEF MEDICAL SERVICE: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and examination.

For example:

a. Follow–up for conjunctivitis.
b. Removal of sutures from laceration (when not a post–op part of a total surgical service).

LIMITED MEDICAL SERVICE: A level of service pertaining to the evaluation of a circumscribed acute illness or to the periodic reevaluation of a problem including an interval history and examination, the review of effectiveness of past medical management, the ordering and

evaluation of appropriate diagnostic tests, the adjustment of therapeutic management as indicated, and the discussion of findings and/or medical management.

For example:

a. Review of history, external examination of eye, initiation of treatment for acute conjunctivitis.

b. Review of interval history, and physical and sensory status, and adjustment of medication in a patient with iridocyclitis or glaucoma.

INTERMEDIATE OPHTHALMOLOGICAL SERVICES: A level of service pertaining to the evaluation of a new or existing condition complicated with a new diagnostic or management problem not necessarily relating to the primary diagnosis, including history, general medical observation, external ocular and adnexal examination and other diagnostic procedures as indicated; may include the use of mydriasis. Intermediate services do not usually include determination of the refractive state but may do so in an established patient (92012) who is under continuing active treatment.

For example:

a. Review of history, external examination, ophthalmoscopy, biomicroscopy for an acute complicated condition (e.g. iritis) not requiring comprehensive ophthalmological services.

b. Review of interval history, external examination, ophthalmoscopy, biomicroscopy and tonometry in established patient with known cataract not requiring comprehensive ophthalmological services.

COMPREHENSIVE OPHTHALMOLOGICAL SERVICES: A level of service in which a general evaluation of the complete visual system is made. The comprehensive services constitute a single service entity but need not be performed at one session. The service includes history, general medical observation, external and ophthalmoscopic examination, gross visual fields and basic sensorimotor examination. It often includes, as indicated: Biomicroscopy, examination with cycloplegia or mydriasis, tonometry, and usually determination of the refractive state unless known, or unless the condition of the media precludes this or it is otherwise contraindicated, as in presence of trauma or severe inflammation. It always includes initiation of diagnostic and treatment programs as indicated.

For example:

The comprehensive services required for diagnosis and treatment of a patient with symptoms indicating possible disease of the visual system, such as glaucoma, cataract or retinal disease, or to rule out disease of the visual system, new or established patient.

"Initiation of diagnostic and treatment program" includes the prescription of medication, lenses and other therapy and arranging for special ophthalmological diagnostic or treatment services, consultations, laboratory procedures and radiological services as may be indicated.

Prescription of lenses may be deferred to a subsequent visit, but in any circumstance is not reported separately. ("Prescription of lenses" does not include anatomical facial measurements for or writing of laboratory specifications for spectacles. For spectacle services, see 92340 et seq.)

DETERMINATION OF THE REFRACTIVE STATE is the quantitative procedure that yields the refractive data necessary to determine the best visual acuity with lenses and to prescribe lenses. It is not a separate medical procedure, or service entity, but is an integral part of the general ophthalmological services, carried out with reference to other diagnostic procedures. The evaluation of the need for and the prescription of lenses is never based on the refractive state alone.

Determination of the refractive state is not reported separately. It is usually part of the comprehensive ophthalmological services (92004, 92014), but may occasionally be a part of intermediate ophthalmological services to an established patient (92012) who, under continuing active treatment with periodic observation, may not require comprehensive reevaluation.

The explanatory codes, –X and –Y, are administrative codes only and not modifiers, and need only be used when by law a carrier in order to administer a program (e.g., MEDICARE) requires the information that "determination of the refractive state of the eyes" was or was not done in the course of the reported services 92004, 92012 or 92014 exclusively:

–X determination of refractive state was performed in course of diagnostic ophthalmological examination

–Y determination of refractive state was not performed in course of diagnostic ophthalmological examination

SPECIAL OPHTHALMOLOGICAL SERVICES: Services in which a special evaluation of part of the visual system is made, which goes beyond the services usually included under general ophthalmological services, or in which special treatment is given.

For example:

Fluorescein angioscopy, quantitative visual field examination, or extended color vision examination (such as Nagel's anomaloscope) should be specifically reported as special ophthalmological services.

Medical diagnostic evaluation by the physician is an integral part of all ophthalmological services. Technical procedures (which may or may not be performed by the physician personally) are often part of the service, but should not be mistaken to constitute the service itself.

Intermediate and comprehensive ophthalmological services constitute integrated services in which medical

diagnostic evaluation cannot be separated from the examining techniques used. Itemization of service components, such as slit lamp examination, keratometry, ophthalmoscopy, retinoscopy, determination of refractive state, tonometry, motor evaluation, etc. is not applicable.

GENERAL OPHTHALMOLOGICAL SERVICES

NEW PATIENT

A patient who is new to the physician whose medical and administrative record needs to be established.

(For brief or limited services to new patient, as for minor adnexal condition, see 90000, 90010)

		Unit Value	Basic Anes@
92002	Ophthalmological services: Medical examination and evaluation with initiation of diagnostic and treatment program; intermediate, new patient	30.0	
92004	comprehensive, new patient, one or more visits	40.0	

ESTABLISHED PATIENT

A patient whose medical and administrative records are available to the physician. The designation of new or established patient does not preclude the use of a specific level of service.

(For minimal, brief, or limited services to an established patient, see 90030–90050)

92012	Ophthalmological services: Medical examination and evaluation, with initiation or continuation of diagnostic and treatment program; intermediate, established patient	30.0	
92014	comprehensive, established patient, one or more visits	40.0	

SPECIAL OPHTHALMOLOGICAL SERVICES

92018	Ophthalmological examination and evaluation, under general anesthesia, with or without manipulation of globe for passive range of motion or other manipulation to facilitate diagnostic examination; complete	20.0	3.0
92019	limited	15.0	
92020	Gonioscopy with medical diagnostic evaluation (separate procedure)	15.0	

(For gonioscopy under general anesthesia, see 92018)

92060	Sensorimotor examination with medical diagnostic evaluation (separate procedure)	25.0	
92065	Orthoptic and/or pleoptic training, with continuing medical direction and evaluation	15.0	
92070	Fitting of contact lens for treatment of disease, including supply of lens	150.0	
92081	Visual field examination with medical diagnostic evaluation; limited examination (e.g., tangent screen, Autoplot, arc perimeter, or single stimulus level automated test, such as Octopus 3 or 7 equivalent)	20.0	
92082	intermediate examination (e.g., multistimulus level, full field, quantitative perimetry, several isopters on Goldmann perimeter or multilevel, full field automated test such as Octopus program 33 or 34 equivalent)	20.0	
92083	extended examination, quantitative perimetry (e.g., manual static and kinetic perimetry on Goldmann or Tubingen perimeter or equivalent, or automated static perimetry, complex, such as Octopus program 31+41 or 32+41)	20.0	

(Gross visual field testing (e.g., confrontation testing) is a part of general ophthalmological services and is not reported separately)

92100	Serial tonometry with medical diagnostic evaluation (separate procedure), one or more sessions, same day	15.0	
92120	Tonography with medical diagnostic evaluation, recording indentation tonometer method or perilimbal suction method	30.0	
92130	Tonography with water provocation	20.0	
92140	Provocative tests for glaucoma, with medical diagnostic evaluation, without tonography	30.0	

OPHTHALMOSCOPY

Routine ophthalmoscopy is part of general and special ophthalmological services whenever indicated. It is not reported separately.

92225	Ophthalmoscopy, extended as for retinal detachment (may include use of contact lens, drawing or sketch, and/or		

		Unit Value	Basic Anes@
	fundus biomicroscopy), with medical diagnostic evaluation; initial	30.0	
92226	subsequent	20.0	
92230	Ophthalmoscopy, with medical diagnostic evaluation; with fluorescein angioscopy (observation only)	50.0	
92235	with fluorescein angiography (includes multiframe photography)	114.4	
92250	with fundus photography	BR	
92260	with ophthalmodynamometry	40.0	

(For ophthalmoscopy under general anesthesia, see 92018)

OTHER SPECIALIZED SERVICES

92265	Oculoelectromyography, one or more extraocular muscles, one or both eyes, with medical diagnostic evaluation	40.0	
92270	Electro–oculography, with medical diagnostic evaluation	40.0	
92275	Electroretinography, with medical diagnostic evaluation	40.0	
92280	Visually evoked potential (response) study, with medical diagnostic evaluation	40.0	

(For electronystagmography for vestibular function studies, see 92541 et seq.)

(For ophthalmic echography (diagnostic ultrasound), see 76511–76529)

92283	Color vision examination, extended, e.g., anomaloscope or equivalent	BR	

(Color vision testing with pseudoisochromatic plates (such as HRR or Ishihara) is not reported separately. It is included in the appropriate general or ophthalmological service.)

92284	Dark adaptation examination, with medical diagnostic evaluation	BR	
92285	External ocular photography with medical diagnostic evaluation for documentation of medical progress (e.g., close–up photography, slit lamp photography, goniophotography, stereo–photography)	BR	
92286	Special anterior segment photography with medical diagnostic evaluation; with specular endothelial microscopy and cell count	BR	
92287	with fluorescein angiography	BR	

CONTACT LENS SERVICE

The prescription of contact lenses (optical and physical characteristics, power, size, curvature) is NOT a part of the general ophthalmological services.

The fitting of contact lenses includes instruction and training of the wearer and incidental revision of the lens.

The supply of the prescribed contact lenses is often reported as a part of the service of fitting. Use modifier '–26' to describe the services of fitting without supply.

To report the supply of contact lens separately, use 92391 or 92396.

(For therapeutic or surgical use of contact lens, see 68340, 92070)

92310	Prescription of optical and physical characteristics of and fitting of contact lens, with medical supervision of adaptation; corneal lens, both eyes, except for aphakia	SV	

(For prescription and fitting of one eye, see modifier –52)

92311	corneal lens for aphakia, one eye	SV	
92312	corneal lens for aphakia, both eyes	SV	
92313	corneoscleral lens	SV	
92314	Prescription of optical and physical characteristics of contact lens, with medical supervision of adaptation and direction of fitting by independent technician; corneal lens, both eyes, except for aphakia	SV	

(For prescription and fitting of one eye, see modifier –52)

92315	corneal lens for aphakia, one eye	SV	
92316	corneal lens for aphakia, both eyes	SV	
92317	corneoscleral lens	SV	
92325	Modification of contact lens (separate procedure), with medical supervision of adaptation	SV	
92326	Replacement of contact lens	SV	

		Unit Value	Basic Anes@
	OCULAR PROSTHETICS, ARTIFICIAL EYE		
92330	Prescription, fitting, and supply of ocular prosthesis (artificial eye), with medical supervision of adaptation	SV	
	(If supply is not included, see modifier –26; to report supply separately, see 92393)		
92335	Prescription of ocular prosthesis (artificial eye) and direction of fitting and supply by independent technician, with medical supervision of adaptation	SV	
	SPECTACLE SERVICES (INCLUDING PROSTHESIS FOR APHAKIA)		

Prescription of spectacles, when required, is an integral part of general ophthalmological services and is not reported separately. It includes specification of lens type (monofocal, bifocal, other), lens power, axis, prism, absorptive factor, impact resistance, and other factors.

Fitting of spectacles is a separate service; when provided by the physician, it is reported as indicated by 92340–92371. Fitting includes measurement of anatomical facial characteristics, the writing of laboratory specification, and the final adjustment of the spectacles to the visual axes and anatomical topography. Presence of physician is not required.

Supply of materials is a separate service component; it is not a part of the service of fitting spectacles.

92340	Fitting of spectacles, except for aphakia; monofocal	SV	
92341	bifocal	SV	
92342	multifocal, other than bifocal	SV	
92352	Fitting of spectacle prosthesis for aphakia; monofocal	SV	
92353	multifocal	SV	
92354	Fitting of spectacle mounted low vision aid; single element system	SV	
92355	telescopic or other compound lens system	SV	
92358	Prosthesis service for aphakia, temporary (disposable or loan, including materials)	SV	
92370	Repair and refitting spectacles, except for aphakia	SV	
92371	spectacle prosthesis for aphakia	SV	
	SUPPLY OF MATERIALS		
92390	Supply of spectacles, except prosthesis for aphakia and low vision aids	SV	
92391	Supply of contact lenses, except prosthesis for aphakia	SV	
	(For supply of contact lenses reported as part of the service of fitting, see 92310–92313)		
	(For replacement of contact lens, see 92326)		
92392	Supply of low vision aids (a low vision aid is any lens or device used to aid or improve visual function in a person whose vision cannot be normalized by conventional spectacle correction. Conventional spectacle correction includes reading additions up to 4 D)	SV	
92393	Supply of ocular prosthesis (artificial eye)	SV	
	(For supply reported as part of the service of fitting, see 92330)		
92395	Supply of permanent prosthesis for aphakia; spectacles	SV	
	(For temporary spectacle correction, see 92358)		
92396	contact lenses	SV	
	(For supply reported as part of the service of fitting, see 92311, 92312)		
	(See 99070 for the supply of other materials, drugs, trays, etc.)		
	OTHER PROCEDURES		
92499	Unlisted ophthalmological service or procedure	BR	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-062, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-062, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-062, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-062, filed 1/30/74. Formerly WAC 296-22-400 (part).]

WAC 296-21-064 Ear.

SPECIAL OTORHINOLOAYNGOLOGIC SERVICES

NOTES

Diagnostic or treatment procedures usually included in a comprehensive otorhinolaryngologic evaluation or office visit, are reported as an integrated medical service, using appropriate descriptors from the 90000 series. Itemization of component procedures, e.g., otoscopy, rhinoscopy, tuning fork test, does not apply.

Special otorhinolaryngologic services are those diagnostic and treatment services not usually included in a comprehensive otorhinolaryngologic evaluation or office

visit. These services are reported separately, using descriptors from the 92500 series.

All services include medical diagnostic evaluation. Technical procedures (which may or may not be performed by the physician personally) are often part of the service, but should not be mistaken to constitute the service itself.

		Unit Value	Basic Anes@
92502	Otolaryngologic examination under general anesthesia	20.0	3.0
92504	Binocular microscopy (separate diagnostic procedure)	13.0	
92506	Medical evaluation speech, language and/or hearing problems	50.0	
92507	Speech, language or hearing therapy, with continuing medical supervision; individual	20.0	
92508	group	15.0	
92511	Nasopharyngoscopy with endoscope (separate procedure)	35.0	
92512	Nasal function studies, e.g., rhinomanometry	20.0	
92516	Facial nerve function studies	20.0	
92520	Laryngeal function studies	20.0	

VESTIBULAR FUNCTION TESTS, WITH OBSERVATION AND EVALUATION BY PHYSICIAN, WITHOUT ELECTRICAL RECORDING

92531	Spontaneous nystagmus, including gaze	SV	
92532	Positional nystagmus	SV	
92533	Caloric vestibular test, each irrigation (binaural, bithermal stimulation constitutes four tests)	SV	
92534	Optokinetic nystagmus	SV	

VESTIBULAR FUNCTION TESTS, WITH RECORDING, e.g., ENG, PENG, AND MEDICAL DIAGNOSTIC EVALUATION

92541	Spontaneous nystagmus test, including gaze and fixation nystagmus, with recording	SV	
92542	Positional nystagmus test, minimum of 4 positions, with recording	SV	
92543	Caloric vestibular test, each irrigation (binaural, bithermal stimulation constitutes four tests), with recording	SV	
92544	Optokinetic nystagmus test, bidirectional, foveal or peripheral stimulation, with recording	SV	
92545	Oscillating tracking test, with recording	SV	
92546	Torsion swing test, with recording	SV	
92547	Use of vertical electrodes in any or all of above tests counts as one additional test	SV	

(For unlisted vestibular tests, see 92599)

AUDIOLOGIC FUNCTION TESTS WITH MEDICAL DIAGNOSTIC EVALUATION

(For evaluation of speech, language and/or hearing problems through observation and assessment of performance, see 92506)

The audiometric tests listed below imply the use of calibrated electronic equipment. Other hearing tests (such as whispered voice, tuning fork) are considered part of the general otorhinolaryngologic services and are not reported separately. All descriptors refer to testing of both ears. Use the modifier "reduced service," if a test is applied to one ear instead of to two ears. All descriptors (except 92559), apply to testing of individuals; for testing of groups, use 92559 and specify test(s) used.

BASIC AUDIOMETRY

92551	Screening test, pure tone, air only	10.0	
92552	Pure tone audiometry (threshold); air only	15.0	
92553	air and bone	20.0	
92555	Speech audiometry; threshold only	30.0	
92556	threshold and discrimination	20.0	
92557	Basic comprehensive audiometry (92553 and 92556 combined), (pure tone, air and bone, and speech, threshold and discrimination)	40.0	
92559	Audiometric testing of groups	50.0	

PURE TONE AUDIOMETRY, EXTENDED

92560	Bekesy audiometry; screening	20.0	
92561	diagnostic	30.0	
92562	Loudness balance test, alternate binaural or monaural	20.0	
92563	Tone decay test	20.0	
92564	Short increment sensitivity index (SISI)	20.0	
92565	Stenger test, pure tone	20.0	
92566	Impedance testing	20.0	
92567	Tympanometry	20.0	
92568	Acoustic reflex testing	20.0	
92569	Acoustic reflex decay testing	20.0	

SPEECH AUDIOMETRY, EXTENDED

92571	Filtered speech test	30.0	
92572	Staggered spondaic word test	30.0	
92573	Lombard test	30.0	
92574	Swinging story test	30.0	
92575	Sensorineural acuity level test	30.0	
92576	Synthetic sentence identification test	30.0	

		Unit Value	Basic Anes@
92577	Stenger test, speech	30.0	
92578	Delayed auditory feedback test	30.0	
	SPECIAL AUDIOMETRIC FUNCTION TESTS		
92580	Electrodermal audiometry	35.0	
92581	Evoked response (EEG) audiometry	100.0	
92582	Conditioning play audiometry	35.0	
92583	Select picture audiometry	35.0	
92584	Electrocochleography	35.0	
92585	Brainstem evoked response recording	BR	
92589	Central auditory function test(s) (specify)	BR	
92590	Hearing aid examination and selection; monaural	BR	
92591	binaural	BR	
92592	Hearing aid check; monaural	BR	
92593	binaural	BR	
92594	Electroacoustic evaluation for hearing aid; monaural	BR	
92595	binaural	BR	
92596	Ear protector attenuation measurements	BR	
	OTHER PROCEDURES		
92599	Unlisted otorhinolaryngological service or procedure	BR	

[Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-064, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-064, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-064, filed 1/30/74.]

WAC 296-21-066 Cardiovascular. Values for items 92950-93799 include laboratory procedure(s), interpretation and physician's services (except surgical and anesthesia services as listed in the section on surgery), unless otherwise stated.

		Unit Value	Basic Anes@
	THERAPEUTIC SERVICES		
92950	Cardiopulmonary resuscitation (e.g., in cardiac arrest)	SV	
	(See also critical care services, 99160)		
92960	Cardioversion, elective, electrical conversion of arrhythmia, external	100.0	4.0
92970	Cardioassist-method of circulatory assist; internal	BR	
92971	external	BR	
	(For balloon atrial-septostomy, see 33738)		
	(For placement of catheters for use in circulatory assist devices such as intra-aortic balloon pumping, see 33970)		
	CARDIOGRAPHY		
	(For echocardiography, see 76601-76628)		
93000	Electrocardiogram, with interpretation and report; routine ECG with at least 12 leads	30.0	
93005	tracing only, without interpretation and report	20.0	
93010	interpretation and report only	15.0	
	(For ECG monitoring, see 99150, 99151)		
93012	Telephonic or telemetric transmission of electrocardiogram, rhythm strip;	BR	
93014	physician review with interpretation and report	BR	
93015	Cardiovascular stress test using maximal or submaximal treadmill or bicycle exercise; continuous electrocardiographic monitoring, with interpretation and report	50.0	
93017	tracing only, without interpretation and report	30.0	
93018	interpretation and report only	25.0	
93024	Ergonovine provocation test	BR	
93040	Rhythm ECG, one to three leads; with interpretation	30.0	
93041	tracing only without interpretation and report	15.0	
93042	interpretation and report only	20.0	
93045	esophageal lead (includes placement and interpretation)	50.0	
93050	Transportation of ECG equipment to home within radius of 7 miles	10.0	
	(For additional mileage, see 99030)		
93201	Phonocardiogram with ECG lead; with supervision during recording with interpretation and report (when equipment is supplied by the physician)	50.0	

		Unit Value	Basic Anes@
93202	tracing only, without interpretation and report (when equipment is supplied by the hospital, clinic, etc.)	15.0	
93204	interpretation and report	25.0	
93205	Phonocardiogram with ECG lead, with indirect carotid artery and/or jugular vein tracing, and/or apex cardiogram; with interpretation and report	60.0	
93208	tracing only, without interpretation and report	15.0	
93209	interpretation and report only	30.0	
93210	Phonocardiogram, intracardiac	70.0	
93220	Vectorcardiogram (VCG), with or without ECG, interpretation and report	50.0	
93221	tracing only, without interpretation and report	15.0	
93222	interpretation and report only	25.0	
93240	Ballistocardiogram	BR	
93255	Apexcardiography	BR	
93270	Electrocardiographic monitoring utilizing a system such as magnetic tape, for up through 12 hours; includes recording, scanning analysis, interpretation and report	BR	
93271	recording only	30.0	
93272	scanning analysis with report	BR	
93273	physician review and interpretation, with report	BR	
93274	Electrocardiographic monitoring utilizing a system such as magnetic tape, 12 through 24 hours; includes recording, scanning analysis, interpretation and report	200.0	
93275	recording only	35.0	
93276	scanning analysis with report	BR	
93277	physician review and interpretation, with report	BR	
	(For unlisted cardiographic procedure, see 93799)		

CARDIAC FLUOROSCOPY

93280	Cardiac fluoroscopy	BR	
	(For chest fluoroscopy, see 71034, 76000)		

ECHOCARDIOGRAPHY

93300	Echocardiography, M–Mode; complete	90.7	
93305	limited (e.g., follow–up or limited study)	BR	
93307	Echocardiography, real–time scan; complete	80.5	
93308	limited	BR	
93309	Echocardiography, M–mode and real time with image documentation	190.7	
93320	Doppler echocardiography	BR	
	(Procedure 93320 is often performed in combination with M–Mode or 2–dimensional echocardiography)		
	(For echocardiography as a radiologic procedure, see 76620–76628)		

Cardiac catheterization

Cardiac catheterization procedure includes placement of catheter(s), recording of intracardiac and intravascular pressure, obtaining blood samples for measurement of blood gases and/or dye (or other) dilution curves and cardiac output measurements (dye dilution, Fick or other method, with or without rest and exercise and/or other studies) with or without electrode catheter placement, final evaluation and report.

(For radiological procedures, see 75500–75755)

Listed values are for the physician's services only and include usual preassessment of cardiac problem and recording of intra–cardiac pressure.

(For consultation services, see 90600–90630)

93501	Right heart catheterization; only	350.0	5.0
	(For bundle of His recording, see 93600)		
93503	Placement of flow directed catheter (e.g., Swan–Ganz), with or without balloon tip, when placed for monitoring purposes, collection of blood, and/or angiography	200.0	5.0
	(For subsequent monitoring, see 99150, 99151)		
93505	Endocardial biopsy	200.0	5.0
93510	Left heart catheterization, retrograde, from the brachial artery, axillary artery or femoral		

		Unit Value	Basic Anes@
	artery; percutaneous	200.0	5.0
93511	by cutdown	200.0	5.0
93514	by left ventricular puncture	200.0	5.0
93515	by transseptal venous catheterization	200.0	5.0
93524	Combined transseptal and retrograde left heart catheterization	400.0	5.0
93526	Combined right heart catheterization and retrograde left heart catheterization	450.0	5.0
93527	Combined right heart catheterization and transseptal left heart catheterization (with or without retrograde left heart catheterization)	400.0	5.0
93528	Combined right heart catheterization with left ventricular puncture (with or without retrograde left heart catheterization)	400.0	5.0
	Injection procedures performed in conjunction with cardiac catheterization. These include placement or repositioning of catheters and use of automatic power injectors. The technical details of angiography, supervision of filming and processing, interpretation and report are not included. For radiological services, see appropriate section.		
93535	Percutaneous insertion and removal of intra–aortic balloon catheter	BR	
93541	Injection procedure during cardiac catheterization; for pulmonary angiography	290.0	
93542	for selective right ventricular or right atrial angiography	290.0	
93543	for selective left ventricular or left atrial angiography	290.0	
	(For radiological procedures, see 75500–75509)		
93544	for aortography	290.0	
	(For radiological procedures, see 75600–75628)		
93545	for selective coronary angiography (injection of radiopaque material may be by hand)	290.0	
	(For radiological procedures, see 75750–75755)		
93546	Combined left heart catheterization and left ventricular angiography	290.0	
93547	Combined left heart catheterization, selective coronary angiography and selective left ventricular angiography (this code number is to be used when procedure 93510 is combined with procedures 93543 and 93545)	350.0	
93548	Combined left heart catheterization, selective coronary angiography, selective left ventriculography, and aortic root aortography	300.0	
93549	Combined right and left heart catheterization, selective coronary angiography, and selective left ventricular angiography (this code number is to be used when procedure 93547 is combined with right heart catheterization)	400.0	
	(For radiographic procedures, see 75741–75748)		
93561	Indicator dilution studies such as dye or thermal dilution, including arterial and/or venous catheterization; with cardiac output measurement (separate procedure)	50.0	
93562	subsequent measurement of cardiac output	20.0	
	(For unlisted cardiac catheterization procedure, see 93799)		
	INTRACARDIAC ELECTROPHYSIOLOGICAL PROCEDURES		
93600	Bundle of His recording	200.0	
93602	Intra–atrial recording	BR	
93604	Intraventricular recording	BR	
93606	Combined intracardiac recording	BR	
93610	Intra–atrial pacing	BR	
93612	Intraventricular pacing	BR	
93614	Bundle of His pacing	BR	
93618	Induction of arrhythmia by electrical pacing	BR	
	(For intracardiac phonocardiogram, see 93210)		
	(For radio–isotope methods, see 78470)		

		Unit Value	Basic Anes@
	Other vascular studies		
	(For arterial cannulization and recording of direct arterial pressure, see 36620)		
	(For radiographic injection procedures, see 36000–36299)		
	(For vascular cannulization for hemodialysis, see 36800–36820)		
	76550, 76900–76920 have been deleted. (For ultrasound vascular procedures, including Doppler, see 76925, 93850–93950)		
	(For chemotherapy for malignant disease, see 90790–90796)		
	(For penile plethysmography, see 54240)		
	(93700 Peripheral vascular disease studies has been deleted. To report, see 93850–93960)		
	(93710 carotid phonoangiography has been deleted. To report, use 93860)		
93720	Plethysmography, total body with interpretation and report.	30.0	
93721	tracing only, without interpretation and report.....	10.0	
93722	interpretation and report only.....	25.0	
	(For regional plethysmography, see 93850–93910)		
	(93725–93730, 93750 have been deleted. To report, see 93850–93960)		
93740	Temperature gradient studies .	BR	
93760	Thermogram; cephalic	covered procedure	
93762	peripheral . . .	noncovered procedure	
93770	Venous pressure determination.....	10.0	
	(For central venous cannulization and pressure measurements, see 36480–36500)		
93780	Circulation time, one test	10.0	
93781	two or more test materials..	20.0	
93784	Ambulatory blood pressure monitoring, utilizing a system such as magnetic tape and/or computer disc, for 24 hours; including recording, scanning analysis, interpretation and report.....	BR	
93786	recording only	BR	
93788	scanning analysis with report.....	BR	
93790	physician review with interpretation and report.....	BR	
93791	Electronic analysis of dual-chamber internal pacemaker system (may include rate, pulse amplitude and duration, configuration of wave form, and/or testing of sensory function of pacemaker); with reprogramming	75.0	
93792	telephonic analysis	15.0	
93793	Electronic analysis of single-chamber internal pacemaker system (may include rate, pulse amplitude and duration, configuration of wave form, and/or testing of sensory function of pacemaker); with reprogramming.....	50.0	
93794	telephonic analysis	15.0	
	(93795, 93796 have been deleted. To report, see 93791–93794)		
	OTHER PROCEDURES		
93799	Unlisted cardiovascular service or procedure	BR	
	NONINVASIVE PERIPHERAL VASCULAR DIAGNOSTIC STUDIES		
	Peripheral vascular studies include patient care required to perform the studies, supervision of the studies and interpretation of study results with copies for patient records of hard copy output or imaging when provided.		
	CEREBROVASCULAR ARTERIAL STUDIES		
93850	Noninvasive studies of cerebral arteries other than carotid (e.g., periorbital flow direction with arterial compression, periorbital photoplethysmography with arterial compression, ocular plethysmography with brachial blood pressure, ocular and ear pulse wave timing).....	BR	
93860	noninvasive studies of carotid artery, nonimaging (e.g., photoangiography with or without spectrum analysis, flow velocity pattern evaluation, analog velocity wave form		

		Unit Value	Basic Anes@
	analysis, diastolic flow evaluation, vertebral arteries flow direction measurement)	BR	
93870	Noninvasive studies of carotid artery, imaging (e.g., flow imaging by ultrasonic arteriography, high resolution B-scan with or without pulsed Doppler flow evaluation, Doppler flow or duplex scan with spectrum analysis)	175.4	
	LIMB ARTERIAL STUDIES (INCLUDING DIGITS)		
93890	Noninvasive studies of upper extremity arteries (e.g., segmental blood pressure measurements, continuous wave Doppler analog wave form analysis, evocative pressure response to exercise or reactive hyperemia, photoplethysmographic or pulse volume digit wave form analysis, flow velocity signals)	114.4	
93910	Noninvasive studies of lower extremity arteries (e.g., segmental blood pressure measurements, continuous wave Doppler analog wave form analysis, evocative pressure response to exercise or reactive hyperemia, photoplethysmography or pulse volume digit wave form analysis, flow velocity signals)	80.0	
	VENOUS STUDIES		
93950	Noninvasive studies of lower extremity veins (e.g., Doppler studies with evaluation of venous flow patterns and responses to compression and other maneuvers, phleborheography)	76.3	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-066, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-066, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-066, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-066, filed 1/30/74. Formerly WAC 296-21-060 (part).]

WAC 296-21-070 Pulmonary. Values for items 94010-94799 include laboratory procedure(s), interpretation and physician's services (except surgical and anesthesia services as listed in the section on surgery), unless otherwise stated. For laboratory procedures only, see section on pathology.

		Unit Value
94010	Spirometry, complete, including graphic record, total and timed vital capacity expiratory flow rate measurement(s), and/or maximal voluntary ventilation	30.0
94060	Bronchospasm evaluation: Spirometry as in 94010, before and after bronchodilator (aerosol or parenteral) or exercise	50.0
94070	Prolonged postexposure evaluation of bronchospasm with multiple spirometric determinations after test dose of bronchodilator (aerosol only) or antigen, with spirometry as in 94010	75.0
94150	Vital capacity, total separate procedure.	6.0
94160	Vital capacity screening tests: Total capacity with timedforced expiratory volume, and peak flow rate ..	10.0
94200	Maximal breathing capacity (maximum voluntary ventilation)	20.0
94240	Functional residual capacity or residual volume; helium method, nitrogen open circuit method, or other method (specify)	25.0
94250	Expired gas collection, quantitative, single procedure (separate procedure)	10.0
94260	Thoracic gas volume	20.0
94350	Determination of maldistribution of inspired gas; multiple breath nitrogen washout curve including alveolar nitrogen or helium equilibration time	BR
	(For plethysmography, see 93720, 93722)	
94360	Determination of resistance to airflow, oscillatory or plethysmographic methods	BR
94370	Determination of airway closing volume, single breath tests	25.0
94375	Respiratory flow volume loop	20.0
94400	Breathing response to CO_2 (CO_2 response curve)	20.0
94450	Breathing response to hypoxia (hypoxia response curve)	20.0
94620	Pulmonary stress testing, simple or complex	40.0
94650	Intermittent positive pressure breathing (IPPB) treatment, air or oxygen, with or without nebulized medication; initial demonstration and/or evaluation	40.0
94651	subsequent	20.0
94652	newborn infants	50.0

		Unit Value
94656	Ventilation assist and management, initiation of pressure or volume preset ventilators for assisted or controlled breathing; first day	40.0
94657	subsequent days	15.0
94660	Continuous positive airway pressure ventilation (CPAP), initiation and management	40.0
94662	Continuous negative pressure ventilation (CNP), initiation and management	40.0
94664	Aerosol or vapor inhalations for sputum mobilization or bronchodilation, or sputum induction for diagnostic purposes; initial demonstration and/or evaluation	30.0
94665	subsequent	15.0
94667	Manipulation chest wall, such as cupping, percussing, and vibration to facilitate lung function; initial demonstration and/or evaluation	40.0
94668	subsequent	15.0
94680	Oxygen uptake, expired gas analysis, rest and exercise, direct, simple	50.0
94681	including CO_2 output, percentage oxygen extracted	100.0
94690	rest, indirect (independent procedure)	16.0
94700	Arterial blood gas study (oxygen saturation, PO_2, PCO_2, CO_2 pH), rest only	70.0
94705	rest and exercise (including cannulization of artery)	130.0
94710	complete, 3 or more (e.g., O_2 administration, IPPB, exercise, etc.)	220.0
94715	Hemoglobin–oxygen affinity (pO_2 for 50% hemoglobin saturation with oxygen)	70.0
	(For values for blood gas determination, see 82800 et seq.)	
	(For single arterial puncture, see 36600)	
94720	Carbon monoxide diffusing capacity, any method	21.0
94725	Membrane diffusion capacity	BR
94750	Pulmonary compliance study any method	BR
94770	Carbon dioxide, expired gas determination by infrared analyzer	BR
	(For bronchoscopy, see 31620–31659)	
	(For placement of flow directed catheter, see 93503)	
	(For venipuncture, see 36410)	
	(For central venous catheter placement, see 36480–36485)	
	(For arterial puncture, see 36600)	
	(For arterial catheterization, see 36620)	
	(For thoracentesis, see 32000)	
	(For phlebotomy, therapeutic, see 99195)	
	(For lung biopsy, needle, see 32405)	
	(For intubation, orotracheal or nasotracheal, see 31500)	
94799	Unlisted pulmonary service or procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-070, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-070, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-070, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-070, filed 1/30/74; Order 68-7, § 296-21-070, filed 11/27/68, effective 1/1/69.]

WAC 296-21-075 Allergy and clinical immunology.

NOTES

ALLERGY SENSITIVITY TESTS: Allergy testing and treatment require prior authorization. The performance and evaluation of selective cutaneous and mucous membrane tests in correlation with the history, physical examination, and other observations of the patient. The number of tests performed should be judicious and dependent upon the history, physical findings, and clinical judgment. All patients should not necessarily receive the same tests nor the same number of sensitivity tests.

IMMUNOTHERAPY (DESENSITIZATION, HYPOSENSITIZATION): The parenteral administration of allergenic extracts as antigens at periodic intervals, usually on an increasing dosage scale to a dosage which is maintained as maintenance therapy. Indications for immunotherapy are determined by appropriate diagnostic procedures coordinated with clinical judgment and knowledge of the natural history of allergic diseases.

OTHER THERAPY: For medical conferences on the use of mechanical and electronic devices (precipitators, air conditioners, air filters, humidifiers, dehumidifiers), climatotherapy, physical therapy, occupational and recreational therapy, see 95105.

(For definitions of LEVELS OF SERVICE, see the Introduction)

(For medical service procedures, see 90000–90699)

(For skin testing of bacterial, viral, fungal extracts, etc., see 86450–86585)

SPECIAL DIAGNOSTIC PROCEDURES (ALLERGY TESTING)

		Unit Value
95000	Percutaneous tests (scratch, puncture, prick) with allergenic extracts; up to 30 tests	10.0
95001	31–60 tests each test	1.0
95002	61–90 tests each test	1.5
95003	more than 90 tests each test	2.0
95005	Percutaneous tests (scratch, puncture, prick) with antibiotics, biologicals, stinging insects; 1–5 tests	10.0
95006	6–10 tests each test	1.0
95007	11–15 tests each test	1.5
95011	more than 15 tests each test	2.0
95014	Intracutaneous (intradermal) tests, with antibiotics, biologicals, stinging insects, immediate reaction 15–20 minutes; 1–5 tests	15.0
95016	6–10 tests each test	2.0
95017	11–15 tests each test	2.5
95018	more than 15 tests each test	3.0
95020	Intracutaneous (interdermal) tests with allergenic extracts, immediate reaction—15 to 20 minutes; up to 10 tests	15.0
95022	21–30 tests each test	2.0
95023	more than 30 tests each test	2.5
95027	Skin end point titration	BR
95030	Intracutaneous (intradermal) tests with allergenic extracts, delayed reaction—24 to 72 hours, including reading; 2 tests	20.0
95031	3–4 tests each test	2.0
95032	5–6 tests each test	2.5
95033	7–8 tests each test	3.0
95034	more than 8 tests each test	3.5
95040	Patch test, one to ten tests	10.0
95041	11–20 tests each test	2.0
95042	21–30 tests each test	2.5
95043	more than 30 tests each test	3.0
95050	Photo–patch test, one to ten tests	10.0
95051	more than 10 tests each test	4.0
95056	Photo test	10.0
95060	Mucous membrane test ophthalmic	10.0
95065	Direct nasal mucous membrane test	10.0
95070	Inhalation bronchial challenge testing (not including necessary pulmonary function tests); with histamine, methacholine, or similar compounds	BR
95071	with antigens, specify	BR

(For pulmonary function tests, see 94060, 94070)

95077	Food allergenic extract immunotherapy	BR
95078	Provocative testing	BR
95080	Passive transfer test one to ten tests	100.0
95081	11–20 tests each test	2.0
95082	more than 20 tests each test	3.0

(For allergy laboratory tests, see 86000–86699)

(For intravenous therapy for severe or intractable allergic disease, see 90799)

(For preparation of antigens, materials supplied by physician, etc., see 99070)

95105	Medical conference services (e.g., use of mechanical and electronic devices, climatotherapy, breathing exercises and/or postural drainage)	50.0

(For summary conference or for therapeutic conference by physician following completion of diagnostic workup, including discussion, avoidance, elimination, symptomatic treatment, and immunotherapy, see 90040–90070)

(For prolonged conference, see 99155–99156)

ALLERGY IMMUNOTHERAPY

95120	Immunotherapy, in prescribing physician's office or institution, including provision of allergenic extract; single antigen	20.0
95125	multiple antigens (specify number of injections)	30.0
95130	single stinging insect venom	20.0
95131	two stinging insect venoms	BR
95132	three stinging insect venoms	BR
95133	four stinging insect venoms	BR
95134	five stinging insect venoms	BR
95135	Professional services performed in the supervision and provision of antigens for allergen immunotherapy (specify number of vials); single antigen, single dose vial	20.0
95140	multiple antigens, single dose vials	30.0
95145	single stinging insect venom, single dose vials	20.0
95146	two single stinging insect venoms, single dose vials	BR
95150	Professional services performed in the supervision and provision of antigens for allergen immunotherapy (specify number of treatments or total volume); single antigen, multiple dose vials	25.0
95155	multiple antigens, multiple dose vials	35.0
95160	stinging insect venom, multiple dose vials	35.0

(For allergy injection(s) by other than the prescribing physician, see 90782)

		Unit Value
95180	Rapid desensitization procedure, each hour (e.g., insulin, penicillin, horse serum)	BR
95199	Unlisted allergy/clinical immunologic service or procedure	BR

(For skin testing of bacterial, viral, fungal extracts, see 95030–95034, 86450–86585)

(For special reports on allergy patients, see 99080)

(For testing procedures such as radioallergosorbent testing (RAST), rat mast cell technique (RMCT), mast cell degranulation test (MDT), lymphocytic transformation test (LTT), leukocyte histamine release (LHR), migration inhibitory factor test (MIF), transfer factor test (TFT), nitroblue tetrazolium dye test (NTD), see Immunology section in Pathology or use 95199)

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–21–075, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–075, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–21–075, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–21–075, filed 1/30/74; Order 68–7, § 296–21–075, filed 11/27/68, effective 1/1/69.]

WAC 296-21-080 Neurology and neuromuscular.

NOTES

Neurologic services are typically consultative, and any of the five levels of consultation (90600–90630) may be appropriate.

In addition, services and skills outlined under medicine levels of service appropriate to neurologic illnesses should be coded similarly (90000 series).

		Unit Value
95819	Electroencephalogram (EEG) including recording awake, drowsy and asleep, with hyperventilation and/or photic stimulation; standard or portable, same facility	70.0
95821	portable, to an alternate facility	80.0
95822	sleep	70.0
95823	physical or pharmacological activation	70.0
95824	cerebral death evaluation recording	70.0
95826	intracerebral (depth) EEG	70.0
95827	all night sleep recording	100.0
95828	Polysomnography (recording, analysis and interpretation of the multiple simultaneous physiological measurements of sleep)	100.0
95829	Electrocorticogram at surgery (separate procedure)	BR
95830	Insertion by physician of sphenoidal electrodes for electroencephalographic (EEG) recording	BR
95831	Muscle testing, manual, (separate procedure); per extremity (excluding hand) or trunk, with report	16.0
95832	hand (with or without comparison with normal side)	10.0
95833	total evaluation of body, excluding hands	50.0
95834	total evaluation of body including hands	64.0
95842	muscle testing electrodiagnosis (e.g., reaction of degeneration, chronaxy, galvanic tetanus ratio), one or more extremity, one or more method	24.0

(95845 Strength duration curve has been deleted. If necessary to report, use 95999)

95851	Range of motion measurements and report, each extremity (independent procedure), excluding hand.	16.0
95852	hand, with or without comparison with normal size	10.0
95857	Tensilon test for myasthenia gravis;	10.0
95858	with electromyographic recording	20.0
95860	Electromyography, one extremity and related paraspinal area	80.0
95861	two extremities and related paraspinal areas	120.0
95863	three extremities and related paraspinal areas	160.0
95864	four extremities and related paraspinal areas	200.0
95867	Electromyography, cranial nerve supplied muscles; unilateral	100.0
95868	bilateral	150.0
95869	Electromyography, limited study of specific muscles (e.g. thoracic spinal muscles)	80.0

(For eye muscles, see 92265)

95875	Ischemic forearm exercise test	20.0
95880	Assessment of higher cerebral function with medical interpretation; aphasia testing	50.0
95881	developmental testing	30.0
95882	cognitive testing and others	30.0
95900	Nerve conduction velocity and/or latency study, motor each nerve	32.0
95904	sensory, each nerve	24.0
95925	Somatosensory testing (e.g., cerebral evoked potentials), one or more nerves	170.3

		Unit Value
95933	Orbicularis oculi (blink) reflex, by electrodiagnostic testing	BR
95935	"H" reflex, by electrodiagnostic testing	44.1
95937	Neuromuscular junction testing (repetitive stimulation, paired stimuli), each nerve, any one method	BR
95950	Monitoring for localization of cerebral seizure focus, by attached electrodes or radiotelemetry; electroencephalographic (EEG) recording and interpretation, initial 24 hours	BR
95951	combined electroencephalographic (EEG) and videorecording and interpretation, initial 24 hours	BR
95952	each additional 24 hours, with or without videorecording	BR
95954	Pharmacological activation during prolonged monitoring for localization of cerebral seizure focus	BR
95955	Electroencephalogram (EEG) during nonintracranial surgery (e.g., carotid surgery)	BR
95958	Wada activation test for hemispheric function, including electroencephalographic (EEG) monitoring	BR
95999	Unlisted neurological or neuromuscular diagnostic procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-080, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-080, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-080, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-080, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-080, filed 1/30/74; Order 68-7, § 296-21-080, filed 11/27/68, effective 1/1/69.]

SPECIFIC THERAPEUTIC PROCEDURES

WAC 296-21-085 Specific therapeutic procedures--Miscellaneous.

The codes within WAC 296-21-085, Specific therapeutic procedures—Miscellaneous, have been deleted. 96000 – 96050 have been deleted. To report see codes 92950, 92960; 95180; 96500 – 96549. For therapeutic radiology, see 79000 – 79999.

For desensitization procedure see 95180.

Codes 96150 – 96450 have been deleted. To report see 99170 – 99186. Codes 96400 and 96450 have been deleted. To report see codes 94650, 94651, 99195. Code 96460 has been deleted. To report see 62273.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-085, filed 2/28/86, effective 4/1/86; Order 75-39, § 296-21-085, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-21-085, filed 1/30/74; Order 68-7, § 296-21-085, filed 11/27/68, effective 1/1/69.]

WAC 296-21-086 Chemotherapy injections. Procedures 96500–96549 are independent of the patient's office visit. Either may occur independently from the other on any given day, or they may occur sequentially on the same day. Oncologists may see their patients at 2 to 4 week intervals with none to 5 chemotherapy procedures between visits.

		Unit Value
96500	Chemotherapy injection, intravenous, single premixed agent, administered by qualified assistant under supervision of physician or by physician; by push technique	BR
96501	by infusion technique	BR
96504	Chemotherapy injection, intravenous, multiple premixed agents, administered by qualified assistant under supervision of physician or by physician; by push technique	BR
96505	by infusion technique	BR
96508	Chemotherapy injection, intravenous, complex, using one or more agents requiring mixing, administered by qualified assistant under supervision of physician or by physician; by push technique	BR
96509	by infusion technique	BR
96510	by infusion technique, prolonged, requiring attendance up to one hour	BR
96511	by infusion technique, prolonged, each additional hour up to a total of eight hours	BR
96512	by infusion technique, prolonged, up to a total of several days, involving the use of portable pump	BR
	(Use 96512 in addition to code for intravenous catheterization; see 36000–36010, 36400–36425, 36480–36491)	
96520	Portable pump refilling and maintenance (use 96520 in addition to 96512)	BR
96524	Chemotherapy injection, complex, administered by physician, arterial infusion technique	BR
96526	Chemotherapy injection, complex, administered by physician, prolonged intra-arterial therapy infusion technique, up to several months	BR
	(Use 96526 in addition to code for intra-arterial catheterization; see 36100–36299, 36640–36660)	

		Unit Value
	(For monitoring of an intra-arterial chemotherapy, drip or forced infusion, see 36620-36625)	
	(For implantation of infusion pump in hepatic artery system for liver chemotherapy, see 36260-36262)	
96530	Implantable pump filling and maintenance	BR
	(Use 96530 in addition to 96526)	
96535	Chemotherapy injection, complex, requiring thoracentesis and/or paracentesis, administered by physician, intracavitary	BR
96538	Chemotherapy injection, requiring lumbar puncture, administered by physician	BR
96540	Chemotherapy injection, intrathecal via reservoir, single or multiple agents, administered by physician	BR
	(For insertion of subarachnoid catheter for infusion of drug, see 63750)	
96545	Provision of chemotherapy agent	BR
	(For radioactive isotope therapy see 79000-79999)	
96549	Unlisted chemotherapy procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-086, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-086, filed 8/2/83.]

WAC 296-21-090 Special dermatological procedures.

Dermatologic services are typically consultative, and any of the five levels of consultation (90600-90630) may be appropriate;

In addition, services and skill outlined under medicine levels of service appropriate to dermatologic illnesses should be coded similarly (90000 series).

(For intralesional injections, see 11900, 11901)

		Unit Value
	(List in addition to office visit.)	
96900	Actinotherapy (ultraviolet light)	5.0
96910	Photochemotherapy; tar and ultraviolet B (Goeckerman treatment)	5.0
96912	psoralens and ultraviolet A (PUVA)	5.0
96999	Unlisted special dermatological service or procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-090, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-01-100 (Order 80-29), § 296-21-090, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-21-090, filed 1/30/74; Order 68-7, § 296-21-090, filed 11/27/68, effective 1/1/69.]

WAC 296-21-095 Physical medicine. The department or self-insurer will authorize and pay for the following physical medicine services only when the services are under the direct, continuous supervision of a physician who is "board qualified" in the field of physical medicine and rehabilitation, (except for (1) and (2) below). The services must be carried out by the physician or registered physical therapist or a physical therapist assistant serving under the direction of a registered physical therapist, by whom he is employed.

The department or self-insurer will allow other licensed physicians to provide physical medicine modalities in the following situations:

(1) The primary attending physician may administer physical therapist modalities as listed under 97000 and/or procedures as listed under 97100 in his office. No more than six such visits will be authorized and paid to the attending physician. If the injured worker requires treatment beyond six visits, he must be referred to a registered physical therapist or a physiatrist for such treatment. The attending physician can bill an office visit in addition to the physical therapy visit for the same day if indicated. Procedure 97070 should be used to bill the physical therapy portion of the visit.

(2) In remote areas, where no registered physical therapist or physical therapist assistant is available, treatment by the attending physician with modalities listed under 97100 may be billed under 97070.

(For fabrication of splints, bracing and other supportive devices, see 99070)

(For muscle testing, range of joint motion, electromyography, etc., see 95831 et seq.)

		Unit Value
	Modalities	
	Physician or therapist is required to be in constant attendance.	
	(97000 has been deleted. To report, use 97010-97039)	
97010	Physical medicine treatment to one area; hot or cold packs	12.0
97012	traction, mechanical	12.0
97014	electrical stimulation (unattended)	12.0
97016	vasopneumatic devices	12.0
97018	paraffin bath	12.0
97020	microwave	12.0
97022	whirlpool	12.0
97024	diathermy	12.0
97026	infrared	12.0

		Unit Value
97028	ultraviolet	12.0
97039	unlisted modality (specify)	12.0
97050	Office visit with two or more modalities to same area	13.0
97070	In remote isolated areas, where there is no registered physical therapist or physical therapist assistant serving under the direction of a registered physical therapist within reasonable distance or when the first six visits are in the physician's office, treatment by any of the listed modalities or procedures given in a physician's office, hospital, advanced registered nurse practitioner clinic, by other than a registered physical therapist, will be allowed	5.0

Procedures

(Physician or therapist is required to be in constant attendance)

(97100 has been deleted. To report, use 97110–97139)

(97101 has been deleted. To report, use 97145)

97110	Physical medicine treatment to one area, initial 30 minutes, each visit; therapeutic exercises	16.0
97112	neuromuscular reeducation	16.0
97114	functional activities	16.0
97116	gait training	16.0
97118	electrical stimulation (manual)	16.0
97122	traction, manual	16.0
97124	massage	16.0
97126	contrast baths	16.0
97128	ultrasound	16.0
97139	unlisted procedure (specify)	BR
97145	Physical medicine treatment to one area, each additional 15 minutes	5.0
97200	Office visit including combination of any modality(s) and procedure(s), initial 30 minutes	16.0
97201	each additional 15 minutes	5.0
97220	Hubbard tank; initial 30 minutes, each visit	24.0
97221	each additional 15 minutes (maximum allowance, one hour)	5.0
97240	Pool therapy or Hubbard tank with therapeutic exercises; initial 30 minutes, each visit	30.0
97241	each additional 15 minutes (maximum allowance, one hour	6.0
97260	Manipulation (cervical, thoracic, lumbosacral, sacroiliac, hand, wrist, etc.), one area (separate procedure) performed by physician	16.0
97261	each additional area	8.0

(Codes 97260 and 97261 may be used in conjunction with code 90030. All other office visit codes include treatment of the day.)

(For manipulation under general anesthesia, see appropriate anatomic section in Musculoskeletal System)

97500	Orthotics training (dynamic bracing, splinting, etc.) upper extremities; initial 30 minutes, each visit	24.0
97501	each additional 15 minutes	12.0
97520	Prosthetic training, initial 30 minutes, each visit	24.0
97521	each additional 15 minutes	12.0
97530	Kinetic activities to increase coordination, strength and/or range of motion, one area (any two extremities or trunk); initial 30 minutes, each visit	24.0
97531	each additional 15 minutes	12.0
97540	Activities of daily living (ADL) and diversional activities; initial 30 minutes, each visit	24.0
97541	each additional 15 minutes	12.0

Tests and Measurements

(For muscle testing, manual or electrical, joint range of motion, electromyography or nerve velocity determination, see 95830–95930)

		Unit Value
97700	Office visit including one of the following tests or measurements, with report	24.0
	(a) Orthotic check–out	
	(b) Prosthetic check–out	
	(c) Activities of daily living check–out; initial 30 minutes, each visit	
97701	each additional 15 minutes	12.0
97720	Extremity testing for strength, dexterity or stamina; initial 30 minutes, each visit	24.0
97721	each additional 15 minutes	12.0

(97740, 97741 have been deleted. To report, see 97530, 97531)

97752	Muscle testing, torque curves during isometric and isokinetic exercise (e.g., by use of Cybex machine)	24.0

		Unit Value
Other Procedures		
97799	Unlisted physical medicine service or procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-21-095, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-21-095, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81-24-041 (Order 81-28), § 296-21-095, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-21-095, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-21-095, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-21-095, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-21-095, filed 1/30/74; Order 70-12, § 296-21-095, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-21-095, filed 11/27/68, effective 1/1/69.]

WAC 296-21-125 Anesthesia. (1) Values for anesthesia services are listed for each procedure in the surgical section and for certain procedures in other sections. These values are to be used only when the anesthesia is personally administered by a licensed physician and surgeon who remains in constant contact attendance during the procedure for the sole purpose of rendering such anesthesia service. These values include usual pre- and post-operative visits, the administration of the anesthetic and the administration of fluids and/or blood incident to the anesthesia or surgery.

(2) "STANDBY SERVICES": When an anesthesiologist is required to participate in the general care of the patient during a surgical procedure, but does not administer anesthesia, these services may be charged on the basis of detention or on the basis of the indicated anesthesia value in accordance with the extent of the services rendered.

(3) In procedures where no value is listed, the basic portion of the calculated value will be the same as listed for a comparable procedure.

(4) Local infiltration, digital block or topical anesthesia administered by the operating surgeon is included in the unit value for the original surgical procedure.

(5) SUPPLEMENTAL SKILLS: When warranted by the necessity of supplemental skills, values for the services of the two or more physicians will be allowed.

(6) Adjunctive services provided during anesthesia and certain other circumstances may warrant an additional charge.

ANESTHESIA MODIFIERS

Since the values of anesthesia services are related to the procedure for which the anesthesia was performed, the anesthesia service is billed under the code number of the procedure. Add appropriate anesthesia modifier -30 to -99 to the procedure number to indicate that billing is for anesthesia service and not the medical or surgical procedure.

Listed values for most procedures may be modified under certain circumstances. When applicable, the modifying circumstances should be identified by the addition of the appropriate "modifier code number" (including hyphen) after the usual procedure number. The value should be listed as a single modified total for the procedure. (When multiple modifiers are applicable to a single procedure, see modifier code -99.)

		Unit Value
-22	UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, if may be identified by adding modifier '-22' to the usual procedure number. A report may also be appropriate.	
-23	UNUSUAL ANESTHESIA: Periodically, a procedure, which usually required either no anesthesia or local anesthesia, because of unusual circumstances must be done under general anesthesia. This circumstance may be reported by adding the modifier '-23' to the procedure code of the basic service.	
-30	ANESTHESIA SERVICE: Add this modifier (- 30) to the usual procedure number and use value listed in "Anes." column for normal, uncomplicated anesthesia.	
-47	ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon use the "basic" anesthesia value without the added value for time. (Note: Surgical units and anesthesia units are not the same dollar value.) List separately from the surgical service provided and identify by adding this modifier (-47) to the usual procedure number. (For local infiltration, digital block or topical anesthesia, see WAC 296-21-125, item 5)	
-75	CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '-75' to the basic service performed.	
-95	SUPERVISORY ANESTHESIA: Supervisory anesthesia is allowable to the supervising anesthesiologist when provided in the hospital and when the registered nurse anesthetist is not in the employ of the supervising anesthesiologist. The basic value is	

		Unit Value
	paid to the supervising anesthesiologist and the time units are paid to the nurse anesthetist. Identify by adding modifier –95 to the procedure code.	
–99	MULTIPLE ANESTHESIA MODIFIERS: Two or more modifiers may be necessary to identify the anesthesia service (e.g., anesthesia performed on a critically ill patient under hypothermic technique). Identify by adding this modifier (–99) to the usual procedure number and briefly indicate the modifying circumstances	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–21–125, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–21–125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–125, filed 11/30/81, effective 1/1/82; Order 74–7, § 296–21–125, filed 1/30/74; Order 68–7, § 296–21–125, filed 11/27/68, effective 1/1/69.]

WAC 296–21–128 Special services and billing procedures--Anesthesia. Many anesthesia services are provided under particularly difficult circumstances depending on factors such as extraordinary condition of patient, notable operative conditions, unusual risk factors. This section includes a list of important qualifying circumstances that significantly impact on the character of the anesthetic service provided. These procedures would not be reported alone but would be reported as additional procedure numbers qualifying an anesthesia procedure or service.

		Unit Value
	QUALIFYING CIRCUMSTANCES: (More than one may be selected.)	
99100	Anesthesia for patient of extreme age, under one year and over seventy	BR
99110	Anesthesia complicated by prone position and/or intubation to avoid surgical field	1.0
99116	Anesthesia complicated by utilization of total body hypothermia	10.0
99125	Anesthesia complicated by extracorporeal circulation, e.g., heart pump oxygenator bypass or pump assist, with or without hypothermia	10.0
99130	Anesthesia complicated by hyperbaric or compression chamber pressurization	BR
99135	Anesthesia complicated by utilization of controlled hypotension.	BR
99140	Anesthesia complicated by emergency conditions (specify) (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part.)	20.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–21–128, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 81–24–041 (Order 81–28), § 296–21–128, filed 11/30/81, effective 1/1/82; Order 74–7, § 296–21–128, filed 1/30/74.]

WAC 296–21–130 Calculation of total anesthesia values. The total anesthesia value is calculated by adding the listed basic value and time units.

A basic value is listed for most procedures. This includes the value of all anesthesia services except the value of the actual time spent administering the anesthesia or in unusual detention with the patient.

The time units are computed by allowing one unit for each 12 minutes of anesthesia time. Anesthesia time begins when the anesthesiologist starts physically to prepare the patient for the induction of anesthesia in the operating room area (or its equivalent) and ends when the anesthesiologist is no longer in constant attendance (when the patient may be safely placed under post–operative supervision).

For example, in a procedure with a basic value of 5.0 units requiring two hours and forty–five minutes of anesthesia time, the time units total 14.0 and are added to the basic value of 5.0, resulting in a value of 19.0 units for this anesthesia service.

When multiple surgical procedures are performed during the same period of anesthesia, only the greater basic value of the various surgical procedures will be used. For example, when a "D & C" with a basic value of 3.0 units is followed by a hysterectomy with a basic value of 5.0 units during the same period of anesthesia, the basic value to be used is 5.0 units. To this value are added the time units applicable for the entire period of anesthesia time for the multiple procedures performed.

Basic value (as listed or modified) + time units = TOTAL ANESTHESIA VALUE.

[Order 74–7, § 296–21–130, filed 1/30/74; Order 70–12, § 296–21–130, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–21–130, filed 11/27/68, effective 1/1/69.]

Chapter 296–22 WAC
SURGICAL FEES

WAC

SURGERY

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296-22-015, 296-22-045, 296-22-046, 296-22-047, 296-22-048, 296-22-049, 296-22-050, 296-22-055, 296-22-056, 296-22-057, 296-22-058, 296-22-059, 296-22-060, 296-22-065, 296-22-070, 296-22-075, 296-22-076, 296-22-077, 296-22-078, 296-22-085, 296-22-086, 296-22-090, 296-22-101, 296-22-102, 296-22-117, 296-22-121, 296-22-126, 296-22-127, 296-22-128, 296-22-256, 296-22-320, 296-22-335, 296-22-366, 296-22-376, 296-22-380, and 296-22-400. [Order 68-7, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

SURGERY

WAC 296-22-010 General information and instructions. Rules and billing procedures pertaining to all practitioners rendering services to injured workers are presented in the general information section beginning with WAC 296-20-010. Some commonalities are repeated here for the convenience of those doctors referring to the surgery section. Definitions and rules unique to surgery are also included here. *Doctor's services* rendered for office, home, hospital, consultations and other services are listed in the medicine section. The department may designate those diagnostic and surgical procedures which can be performed in other than a hospital inpatient setting. Where a worker has a medical condition which necessitates a hospital admission, prior approval of the department or self-insurer must be obtained.

(1) Listed values for all surgical procedures include the surgery, local infiltration, digital block or topical anesthesia when used and the normal uncomplicated follow-up care for the period indicated in days in the column headed "follow-up days."

(2) Follow-up care for diagnostic procedures (e.g., endoscopy, injection procedures for radiography, etc.) includes only that care related to recovery from the diagnostic procedure itself. Care of the condition for which the diagnostic procedure was performed or other concomitant conditions is not included and may be charged for in accordance with the services rendered.

(3) Follow-up care for therapeutic surgical procedures includes only that care usually a part of the surgical service. Complications, exacerbations, recurrence or the presence of other diseases or injuries requiring additional services concurrent with the procedure(s) or during the listed period of normal follow-up care may warrant additional charges. (See modifier -68.)

When an additional surgical procedure(s) is carried out within the listed period of follow-up care for a previous surgery, the follow-up periods will continue concurrently to their normal terminations.

(4) PREOPERATIVE VISITS AND SERVICES: Under most circumstances the immediate preoperative visit in the hospital or elsewhere necessary to examine the patient, complete the hospital records, and initiate the treatment program is included in the listed value for the surgical procedure.

Additional charges may be warranted for preoperative services under the following circumstances:

(a) When the preoperative visit is the initial visit (e.g., an emergency, etc.) and prolonged detention or evaluation is required to prepare the patient or to establish the need for and type of surgical procedure.

(b) When the preoperative visit is a consultation as defined in WAC 296-21-030.

(c) When procedures not usually part of the basic surgical procedure (e.g., bronchoscopy prior to chest surgery, etc.) are provided during the immediate preoperative period.

(5) CONCURRENT SERVICES BY MORE THAN ONE PHYSICIAN: Charges for concurrent services of two or more physicians may be warranted under the following circumstances:

(a) Medical services provided during the surgical procedure or in the postoperative period (e.g., diabetic management, operative monitoring of cardiac or brain conditions, management of postoperative electrolyte imbalance, etc.).

(b) TWO SURGEONS: Under certain circumstances the skills of two surgeons (e.g., a urologist and a general surgeon in the creation of an ileal conduit, etc.). By prior agreement, the total value may be apportioned in relation to the responsibility of work done. The total value may be increased by 25% in lieu of the assistant's charge. (See modifier -62.)

(c) CO-SURGEONS: Under certain circumstances, two surgeons (usually with similar skills) may function simultaneously as primary surgeons performing distinct parts of a total surgical service (e.g., two surgeons simultaneously applying skin grafts to different parts of the body of the same patient). By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by an appropriate amount in lieu of the usual assistant's charge. (See modifier -64.)

(d) SURGICAL TEAM: Under some circumstances highly complex procedures requiring the concomitant services of several physicians, often of different specialties, plus other highly skilled, specially trained personnel and various types of complex equipment are carried out under the surgical team concept with a single, global fee for the total service. The services included in the "global" charge vary widely and no single value can be listed. The value should be supported by a report to include itemization of the physician(s) services, paramedical personnel and equipment included in the "global" charge. (See modifier -66.)

(6) ASTERISK (*) PROCEDURES OR ITEMS: Certain relatively small surgical services involve a readily identifiable surgical procedure but include variable preoperative and postoperative services (e.g., incision and drainage of an abscess, injection of a tendon sheath, manipulation of a joint under anesthesia, dilation of the urethra, etc.). Because of the indefinite pre and postoperative services the usual "package" concept for surgical services (see above) cannot be applied. Such procedures are identified by an asterisk (*) preceding or following the procedure code number.

Where an asterisk (*) precedes or follows a procedure number and its value, the following rules apply:

(a) The services as listed includes the surgical procedure only. Associated pre and postoperative services are not included.

(b) Preoperative services are considered as one of the following:

(i) When the asterisk (*) procedure is carried out at the time of an initial visit (new patient) and this procedure constitutes the major service at that visit, procedure number 99025 is listed in lieu of the usual initial visit as an additional service.

(ii) When the asterisk (*) procedure is carried out at the time of an initial or other visit involving significant

identifiable services (e.g., removal of a small skin lesion at the time of a comprehensive history and physical examination), the appropriate visit is listed in addition to the asterisk (*) procedure and its follow-up care.

(iii) When the asterisk (*) procedure is carried out at the time of a follow-up (established patient) visit and this procedure constitutes the major service at that visit, no visit service is usually added.

(iv) When the asterisk (*) procedure requires hospitalization, an appropriate hospital visit is listed in addition to the asterisk (*) procedure and its follow-up care.

(c) All postoperative care is to be added on a service-by-service basis (e.g., office or hospital visit, cast change, etc.).

(d) Complications are added on a service-by-service basis (as with all surgical procedures).

(7) MULTIPLE OR BILATERAL SURGICAL PROCEDURES:

(a) When multiple surgical procedures which add significant time or complexity to patient care are performed at the same operative session. (See modifier -51.)

(b) When bilateral surgical procedures which add significant time or complexity to patient care are performed at the same operative session. (See modifier -50.)

(c) Incidental procedures (e.g., incidental appendectomy, incidental scar incision, puncture of ovarian cysts, simple lysis of adhesions, simple repair of hiatal hernia, etc.) do not warrant an additional charge. (See modifier -52.) THESE PROCEDURES MUST BE AUTHORIZED IN ADVANCE.

(8) SURGERY AND FOLLOW-UP CARE PROVIDED BY DIFFERENT PHYSICIANS: When one physician performs the surgical procedure itself and another provides the follow-up care, the value may be apportioned between them by agreement along with notification to the department of the fee distribution. (See modifier -54 or -55.)

(9) ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon, value as "basic" value for anesthesia procedure without added value for time. (See modifier -47) (For local infiltration, digital block or topical anesthesia, see WAC 296-22-010, item 1.)

(10) In cases where the claimant does not survive, the percentage of the flat fee paid the physician shall be commensurate with the services rendered.

(11) The emergency room will be considered the office for those physicians providing regular emergency room care to the hospital and fees will be allowed on this basis.

(12) Materials supplied by physician: Supplies and materials provided by the physician, e.g., sterile trays/drugs, over and above those usually included with the office visit or other services rendered may be listed separately. List drugs, trays, supplies, and materials provided. Identify as 99070.

(13) Separate or multiple procedures: It is appropriate to designate multiple procedures that are rendered on the same date by separate entries. (See Modifier -50 below.)

(14) Special report: A service that is rarely provided, unusual, variable, or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure, and the time, effort, and equipment necessary to provide the service. Additional items which may be included are: Complexity of symptoms, final diagnosis, pertinent physical findings (such as size, location, and number of lesion(s), if appropriate), diagnostic and therapeutic procedures (including major and supplementary surgical procedures, if appropriate), concurrent problems, and follow-up care. See WAC 296-20-01002 for "BR" By Report instructions.

(15) Surgery modifiers: (For other modifiers, see appropriate sections.)

Listed values and procedures may be modified under certain circumstance. When applicable, the modifying circumstance should be identified by the addition of the appropriate "modifier code number" which is a two digit number placed after the usual procedure number from which it is separated by a hyphen. If more than one modifier is used, the "multiple modifiers" placed first after the procedure code indicates one or more additional modifier codes will follow. All modifiers and their respective codes are listed in Appendix A. Modifiers commonly used in surgery are as follows:

		Unit Value
-20	When the surgical service is performed using the techniques of micro-surgery in an operating room and under the operating microscope, the modifier -20 may be added to the surgical procedure. The use of this modifier is not warranted when surgery is done with the aid of a magnifying loupe or magnifying binoculars worn by the surgeon. A special report may be appropriate to document the necessity of the micro-surgical approach. The total value of the surgical procedure may be increased by 20%. A special report may be appropriate to document the necessity of the micro-surgical approach. The department will publish a list of surgical procedures that have approval for this modifier.	
-22	UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, it may be identified by adding modifier '-22' to the usual procedure number. List modified value. A report may be required.	
-23	UNUSUAL ANESTHESIA: Periodically, a procedure, which usually requires	

		Unit Value
	either no anesthesia or local anesthesia, because of unusual circumstances must be done under general anesthesia. This circumstance may be reported by adding the modifier '–23' to the procedure code of the basic service.	BR
–25	DIGITAL RADIOLOGY (e.g., digital subtraction angiography, digital fluoroscopy, digital radiography). When this technique is utilized, the modifier '–25' may be appended to the appropriate five digit number of the radiologic procedure to indicate that the digital modality was applied. The modifier would be applied to both the supervision and interpretation service and complete procedure. When the supervision and interpretation service code is utilized and the injection is done by a second physician, the modifier need not be applied to the surgical injection codes.	
–26	PROFESSIONAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific diagnostic and therapeutic services) are a combination of a physician component and a technical component. When the physician component is reported separately, the service may be identified by adding the modifier '–26' to the usual procedure number.	BR
–47	ANESTHESIA BY SURGEON: When regional or general anesthesia is provided by the surgeon, it may be reported by adding to modifier '–47' to the basic service. (This does not include local anesthesia.)	

Use the "basic" anesthesia value only. (Note: Surgical units and anesthesia units are not of the same dollar values.) List separately from the surgical service provided and identify by adding this modifier '–47' to the usual procedure number. (For local infiltration, digital block or topical anesthesia, see WAC 296–21–125, item 5.)

		Unit Value
–50	BILATERAL PROCEDURE: Unless otherwise identified in the listings, bilateral procedures requiring a separate incision that are performed at the same operative session, should be identified by the appropriate five digit code describing the first procedure. The second (bilateral) procedure is identified by adding modifier –50 to the procedure number and value at 50% of the listed value(s) unless otherwise indicated.	
–51	MULTIPLE PROCEDURES: When multiple procedures which add significant time or complexity to patient care are provided at the same operative session, identify and value the first or major procedure as listed. Identify secondary or lesser procedure(s) by '–51' to the usual procedure number(s) and value at 50% of the listed value(s) unless otherwise indicated.	
–52	REDUCED VALUES: Under certain circumstances, the listed value for a procedure is reduced or eliminated at the physician's election. Under these circumstances, the service provided can be identified by it's usual procedure number and the addition of modifier '–52', signifying that the service is reduced. For example: (a) Incidental procedures (e.g., incidental appendectomies, incidental scar excisions, puncture of ovarian cysts, simple lysis of adhesions, simple repair of a hiatal hernia, etc.) do not warrant an additional charge. (b) When the listed value is reduced in conformity with a ground rule (e.g., rereduction of a fracture). (c) When charges for multiple procedures (e.g., multiple lacerations, etc.) are reduced at the physician's election to achieve an appropriate total charge.	
–54	SURGICAL PROCEDURE ONLY: When one physician performs the surgical procedure and another provides the pre and/or postoperative management surgical services may be identified by adding the modifier '–54' to the usual procedure number. Value may be apportioned between them by agreement.	
–55	POSTOPERATIVE MANAGEMENT ONLY: When one physician performs the postoperative management and another has performed	

		Unit Value
	the surgical procedure, the post operative component may be identified by adding the modifier '–55' to the usual procedure number. Value may be apportioned between them by agreement.	
–56	PREOPERATIVE MANAGEMENT ONLY: When one physician performs the preoperative care and evaluation and another physician performs the surgical procedure, the preoperative component may be identified by adding the modifier '–56' to the usual procedure number. Value is apportioned as per agreement between practitioners involved.	
–62	TWO SURGEONS: Under certain circumstances the skills of two surgeons (usually with different skills) may be required in the management of a specific surgical problem (e.g., a urologist and a general surgeon in the creation of an ileal conduit, etc.). By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by 25% in lieu of the assistant's charge. Under these circumstances the services of each surgeon should be identified by adding this modifier '–62' to the joint procedure number(s) and valued as agreed upon. (Usual charges for surgical assistance may also be warranted if still another physician is required as part of the surgical team.)	
–64	CO–SURGEONS: Under certain circumstances, two surgeons (usually with similar skills) may function simultaneously as primary surgeons performing distinct parts of a total surgical service (e.g., two surgeons simultaneously applying skin grafts to different parts of the body or two surgeons repairing different fractures in the same patient). By prior agreement, the total value may be apportioned in relation to the responsibility and work done. The total value may be increased by 25% in lieu of the usual assistant's charge. Under these circumstances the services of each surgeon should be identified by adding this modifier '–64' to the joint procedure number(s) and valued as agreed upon. (Usual charges for surgical assistance may also be warranted if still another physician is required as part of the surgical team.)	
–66	SURGICAL TEAM: Under some circumstances, highly complex procedures requiring the concomitant services of several physicians, often of different specialities, plus other highly skilled, specially trained personnel and various types of complex equipment are carried out under the "surgical team" concept. Such circumstances should be identified by adding this modifier '–66' to the basic procedure number. The value should be supported by a report to include itemization of the physician(s) services, paramedical personnel and equipment included in the charge	BR
–68	COMPLICATIONS: Complications or circumstances requiring unusual additional services during the listed follow–up period may warrant additional charges on a fee–for–service basis. Identify these conditions by adding this modifier '–68' to the usual procedure number(s) for the additional service(s) rendered and indicate the appropriate value(s). May require a report.	
–75	CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '–75' to the basic service performed.	
–76	REPEAT PROCEDURE BY SAME PHYSICIAN: The physician may need to indicate that a procedure or service was repeated subsequent to the original service. This may be reported by adding the modifier '–76' to the procedure code of the repeated service.	
–77	REPEAT PROCEDURE BY ANOTHER PHYSICIAN: The physician may need to indicate that a basic procedure performed by another physician had	

		Unit Value
	to be repeated. This may be reported by adding modifier '-77' to the repeated service.	
-80	ASSISTANT SURGEON: Surgical assistant services are identified by adding this modifier '-80' to the usual procedure number(s) and are valued at 20% of the listed value of the surgical procedure(s)	
	OR	
-81	MINIMUM ASSISTANT SURGEON ALLOWANCE: Identify by adding this modifier '-81' to the usual procedure number and value at	1.7
-90	REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by a party other than the treating or reporting physician, the procedure may be identified by adding the modifier '-90' to the usual procedure number.	
-99	MULTIPLE MODIFIERS: Under certain circumstances, two or more modifiers may be necessary to completely delineate a service.	
	In such situations, modifier '-99' should be added to the procedure number and other applicable modifiers may be listed as part of the description of the service	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-22-010, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-22-010, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-010, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-010, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-010, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-010, filed 1/30/74; Order 70-12, § 296-22-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-22-010, filed 11/27/68, effective 1/1/69.]

WAC 296-22-016 Footnotes.

+ BR: By report; see WAC 296-20-01002 for detailed information.
@ Listed units represent basic anesthesia value only; add value for time. See WAC 296-21-130 for calculating total anesthesia values.
& Sv: See WAC 296-20-01002 before using.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-016, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-016, filed 1/30/74.]

WAC 296-22-017 Unlisted service or procedure. A service or procedure may be provided that is not listed in this fee schedule. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296-22-01701 below. The "unlisted procedures" and accompanying codes for SURGERY are as follows:

15999	Unlisted procedure, excision pressure ulcer
17999	Unlisted procedure, integumentary system
19499	Unlisted procedure, breast
20999	Unlisted procedure, musculoskeletal system, general
21499	Unlisted procedure, head
21899	Unlisted procedure, neck or thorax
22899	Unlisted procedure, spine
22999	Unlisted procedure, abdomen, musculoskeletal system
23929	Unlisted procedure, shoulder
24999	Unlisted procedure, humerous or elbow
25999	Unlisted procedure, forearm or wrist
26989	Unlisted procedure, hands or fingers
27299	Unlisted procedure, pelvis or hip joint
27599	Unlisted procedure, femur or knee
27899	Unlisted procedure, leg or ankle
28899	Unlisted procedure, foot or toes
29799	Unlisted procedure, casting or strapping
30999	Unlisted procedure, nose
31299	Unlisted procedure, accessory sinuses
31599	Unlisted procedure, larynx
31899	Unlisted procedure, trachea, bronchi
32999	Unlisted procedure, lungs and pleura
33999	Unlisted procedure, cardiac surgery
36299	Unlisted procedure, vascular injection
37799	Unlisted procedure, vascular surgery
38999	Unlisted procedure, hemic or lymphatic system
39499	Unlisted procedure, mediastinum
39599	Unlisted procedure, diaphragm
40799	Unlisted procedure, lips
40899	Unlisted procedure, vestibule of mouth
41599	Unlisted procedure, tongue, floor of mouth
41899	Unlisted procedure, dentoalveolar structures
42299	Unlisted procedure, palate, uvula
42699	Unlisted procedure, salivary glands or ducts
42999	Unlisted procedure, pharynx, adenoids, or tonsils
43499	Unlisted procedure, esophagus
43999	Unlisted procedure, stomach
44799	Unlisted procedure, intestine
44899	Unlisted procedure, Meckel's diverticulum and the mesentary
45999	Unlisted procedure, rectum
46999	Unlisted procedure, anus
47399	Unlisted procedure, liver
47999	Unlisted procedure, biliary tract
48999	Unlisted procedure, pancreas
49999	Unlisted procedure, abdomen, peritoneum and omentum

53899	Unlisted procedure, urinary system
55899	Unlisted procedure, male genital system
58999	Unlisted procedure, female genital system
59899	Unlisted procedure, maternity care and delivery
60699	Unlisted procedure, endocrine system
64999	Unlisted procedure, nervous system
66999	Unlisted procedure, anterior segment of eye
67299	Unlisted procedure, posterior segment
67399	Unlisted procedure, ocular muscle
67599	Unlisted procedure, orbit
67999	Unlisted procedure, eyelids
68399	Unlisted procedure, conjunctiva
68899	Unlisted procedure, lacrimal system
69399	Unlisted procedure, external ear
69799	Unlisted procedure, middle ear
69949	Unlisted procedure, inner ear
69979	Unlisted procedure, temporal bone, middle fossa approach.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-017, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-017, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-017, filed 12/3/80, effective 3/1/81; Order 76-34, § 296-22-017, filed 11/24/76, effective 1/1/77.]

WAC 296-22-01701 Special report. A service that is rarely provided, unusual, variable, or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure; and the time, effort, and equipment necessary to provide the service. Additional items which may be included are: Complexity of symptoms, final diagnosis, pertinent physical findings (such as size, location, and number of lesion(s), if appropriate), diagnostic and therapeutic procedures (including major and supplementary surgical procedures, if appropriate), current problems, and followup care.

[Order 76-34, § 296-22-01701, filed 11/24/76, effective 1/1/77.]

INTEGUMENTARY SYSTEM

WAC 296-22-020 Skin, subcutaneous and areolar tissues.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*10000	Incision and drainage of infected or noninfected subaceous cyst; one lesion	*0.4	0	3.0
10001	second lesion	0.2		3.0
10002	more than two lesions	0.1		3.0
10003*	Incision and drainage of infected or noninfected epithelial inclusion cyst ("sebaceous cyst") with complete removal of sac and treatment of cavity	.8	0	3.0
	(For excision, see 11400, et seq.)			
*10020	Incision and drainage of furuncle	*0.4	0	3.0
*10040	Acne surgery: (e.g., marsupialization, opening, or removal of multiple milia, comedones, cysts, pustules)	*0.3	0	3.0
*10060	Incision and drainage of abscess (e.g., carbuncle, suppurative hidradenitis, and other cutaneous or subcutaneous abscesses); simple	0.4	0	3.0
10061	complicated	BR+		3.0
*10080	Incision and drainage of pilonidal cyst; simple	*0.4	0	3.0
10081	complicated	BR+		3.0
	(For excision of pilonidal cyst, see 11770-11772)			
*10100	Incision and drainage of onychia or paronychia, single or simple	*0.4	0	3.0
10101	multiple or complicated	BR+		3.0
*10120	Incision and removal of foreign body, subcutaneous tissues; simple	*0.4	0	3.0
10121	complicated	BR+		3.0
*10140	Incision and drainage of hematoma, simple	*0.4	0	3.0
10141	complicated	BR+		3.0
*10160	Puncture aspiration of abscess, hematoma, bulla, or cyst	*0.3	0	3.0
10180	Incision and drainage, complex, postoperative wound infection	BR		3.0
	(For secondary closure of surgical wound, see 12020, 12021, 13160)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-020, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-020, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-020, filed 1/30/74; Order 68-7, § 296-22-020, filed 11/27/68, effective 1/1/69.]

WAC 296-22-021 Excision--Debridement.

		Unit Value	Follow-up Days=	Basic Anes@
DEBRIDEMENT				
	(For dermabrasions, see 15780-15800)			
	(For nail debridement, see 11700-11711)			
	(For burn(s), see 16000-16030)			
*11000	Debridement of extensive eczematous or infected skin; up to 10% of body surface	*0.4	0	3.0
11001	each additional 10% of the body surface	0.2		3.0
11040	Debridement; skin, partial thickness	BR+		3.0
11041	skin, full thickness	BR		3.0
11042	skin and subcutaneous tissue	BR		3.0
11043	skin, subcutaneous tissue, and muscle	BR		3.0

		Unit Value	Follow–up Days=	Basic Anes@
11044	skin, subcutaneous tissue, muscle, and bone	BR		3.0
	PARING OR CURETTEMENT			
11050*	Paring or curettement of benign lesion with or without chemical cauterization (such as verrucae or clavi); single lesion	0.5	0	3.0
11051	two to four lesions	0.6		3.0
11052	more than four lesions	0.7		3.0
	EXCISION AND SIMPLE CLOSURE			
	(Not reconstructive surgery; for reconstructive surgery see repair–complex)			
	(For electro–surgical and other methods, see 17000 et seq.)			
	BIOPSY			
11100	Biopsy of skin, subcutaneous tissue and/or mucous membrane (including simple closure), unless otherwise listed (separate procedure); one lesion	0.6	7	3.0
11101	each additional lesion	0.2	7	3.0
	(For biopsy of conjunctiva, see 68100; eyelid, see 67810)			
	EXCISION–BENIGN LESIONS			
	Excision (including simple closure) of benign lesions of skin or subcutaneous tissues (e.g., cicatricial, fibrous, inflammatory, congenital, cystic lesions), including local anesthesia. See appropriate size and area below.			
	(For electrosurgical and other methods see 17000 et seq.)			
*11200	Excision, skin tags, multiple fibrocutaneous tags, any area; up to 15	*0.4	0	3.0
11201	each additional 10 lesions	0.2		3.0
	(For electrosurgical destruction, see 17200, 17201)			
	(For multiple lesions, see WAC 296–22–010, item 7)			
11400	Excision, benign lesion, except skin tag (unless listed elsewhere), trunk, arms or legs; lesion diameter up to 0.5 cm	0.6	15	3.0
11401	lesion diameter 0.5 to 1.0 cm	0.8	15	3.0
11402	lesion diameter 1.0 to 2.0 cm	1.0	15	3.0
11403	lesion diameter 2.0 to 3.0 cm	1.2	15	3.0
11404	lesion diameter 3.0 to 4.0 cm	1.4	15	3.0
11406	lesion diameter over 4.0 cm	1.6	15	3.0
	(For unusual or complicated excision, add modifier –22)			
11420	Excision, benign lesion, except skin tag (unless listed elsewhere), scalp, neck, hands, feet, genitalia; lesion diameter up to 0.5 cm	0.8	15	3.0
11421	lesion diameter 0.5 to 1.0 cm	1.0	15	3.0
11422	lesion diameter 1.0 to 2.0 cm	1.2	15	3.0
11423	lesion diameter 2.0 to 3.0 cm	1.4	15	3.0
11424	lesion diameter 3.0 to 4.0 cm	1.6	15	3.0
11426	lesion diameter over 4.0 cm	1.8	15	3.0
	(For unusual or complicated excision, add modifier –22)			
11440	Excision, other benign lesion (unless listed elsewhere), face, ears, eyelids, nose, lips, mucous membrane; lesion diameter up to 0.5 cm	1.0	15	3.0
11441	lesion diameter 0.5 to 1.0 cm	1.2	15	3.0
11442	lesion diameter 1.0 to 2.0 cm	1.4	15	3.0
11443	lesion diameter 2.0 to 3.0 cm	1.6	15	3.0
11444	lesion diameter 3.0 to 4.0 cm	1.8	15	3.0
11446	lesion diameter over 4.0 cm	2.0	15	3.0
	(For unusual or complicated excision, add modifier –22)			
	(For eyelids involving more than skin, see also 67800 et seq.)			
11450	Excision of skin and subcutaneous tissue for hidradenitis, axillary; with primary suture	BR		3.0
11451	with other closure	BR		3.0
11462	Excision of skin and subcutaneous tissue for hidradenitis, inguinal; with primary suture	BR		3.0
11463	with other closure	BR		3.0
11470	Excision of skin and subcutaneous tissue for hidradenitis, perianal, perineal, or umbilical; with primary closure	BR		3.0
11471	with other closure	BR		3.0
	(When skin graft or flap is used for closure, use appropriate procedure code in addition)			
	(For bilateral procedure, add modifier –50)			
	EXCISION–MALIGNANT LESIONS			
	Excision (including simple closure) or treatment by any other method (except radiation or chemosurgery) of malignant lesion of skin, including local anesthesia, each lesion:			
11600	Excision, malignant; lesion, trunk, arms, or legs; lesion diameter up to 0.5 cm	1.2	90	3.0
11601	lesion diameter 0.5 to 1.0 cm	1.6	90	3.0
11602	lesion diameter 1.0 to 2.0 cm	2.0	90	3.0
11603	lesion diameter 2.0 to 3.0 cm	2.4	90	3.0
11604	lesion diameter 3.0 to 4.0 cm	2.8	90	3.0
11606	lesion diameter over 4.0 cm	3.2	90	3.0
11620	Excision, malignant lesion, scalp, neck, hands, feet, genitalia; lesion diameter up to 0.5 cm	2.0	90	3.0
11621	lesion diameter 0.5 to 1.0 cm	3.0	90	3.0
11622	lesion diameter 1.0 to 2.0 cm	4.0	90	3.0
11623	lesion diameter 2.0 to 3.0 cm	5.0	90	3.0
11624	lesion diameter 3.0 to 4.0 cm	6.0	90	3.0
11626	lesion diameter over 4.0 cm	7.0	90	3.0
11640	Excision, malignant lesion, face, ears, eyelids, nose, lips; lesion diameter up to 0.5 cm	3.0	90	3.0
11641	lesion diameter 0.5 to 1.0 cm	4.0	90	3.0
11642	lesion diameter 1.0 to 2.0 cm	5.0	90	3.0
11643	lesion diameter 2.0 to 3.0 cm	6.0	90	3.0
11644	lesion diameter 3.0 to 4.0 cm	7.0	90	3.0
11646	lesion diameter over 4.0 cm	8.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For eyelids involving more than skin, see also 67800 et seq.)			
NAILS				
	(For drainage of paronychia or onychia, see 10100, 10101)			
*11700	Debridement nails, manual, five or less	*0.3	0	3.0
11701	each additional five or less	0.15		
11710	Debridement of nails, electric grinder, five or less	*0.4	0	3.0
11711	each additional five or less	0.2		3.0
*11730	Avulsion of nail plate, partial or complete, simple; single	*0.4	0	3.0
11731	second nail plate	0.2		
11732	each additional nail plate	0.1		
11740	Evacuation of subungual hematoma	0.3	0	3.0
11750	Excision of nail and nail matrix, partial or complete (e.g., ingrown or deformed nail), for permanent removal	2.0	30	3.0
	(For skin graft, if used, see 15050)			
11760	Reconstruction of nail bed; simple	2.5	0	3.0
11762	complicated	3.0	0	3.0
MISCELLANEOUS				
	(For incision of pilonidal cyst, see 10080, 10081)			
11770	Excision of pilonidal cyst or sinus, simple	2.0	30	3.0
11771	extensive	7.0	60	3.0
11772	complicated	BR+		3.0
	(For hemangioma, see 11400–11446, 13100–15730)			
	(For hidradenitis, see 10060–10061, 11450–11471)			
	(For lipoma, see 11400–11446, 13100–15730)			
	(For lymph node dissection, see 38700–38780)			
	(For ulcer, vascular or inflammatory, see 11400–11446, 13100–15730)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-021, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-021, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-021, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-021, filed 1/30/74; Order 68-7, § 296-22-021, filed 11/27/68, effective 1/1/69.]

WAC 296-22-022 Introduction.

		Unit Value	Follow-up Days=	Basic Anes@
*11900	Injection, intralesional; up to and including seven lesions	*0.4	0	3.0
*11901	more than seven lesions	*0.72	0	3.0
	(For veins, see 36470, 36471)			
11920	Tattooing, intradermal introduction of insoluble opaque pigments to correct color defects of skin; up to 6.0 sq cm	BR		3.0
11921	6.0 to 20.0 sq cm	BR		3.0
11922	each additional 20.0 sq cm	BR		3.0
11950	Subcutaneous injection of "filling" material (e.g., silicone); up to 1 cc	BR		3.0
11951	1 to 5 cc	BR		3.0
11952	5 to 10 cc	BR		3.0
11954	over 10 cc	BR		
11960	Insertion of tissue expander	BR		3.0
11970	Replacement of tissue expander with permanent prosthesis	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-022, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-022, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-022, filed 1/30/74; Order 68-7, § 296-22-022, filed 11/27/68, effective 1/1/69.]

WAC 296-22-023 Repair. The repair of wounds may be classified as simple, intermediate or complex.

SIMPLE REPAIR is used when the wound is superficial; i.e., involving skin and/or subcutaneous tissues, without significant involvement of deeper structures, and which requires simple suturing. For closure with adhesive strips, list appropriate visit only.

INTERMEDIATE REPAIR includes the repair of wounds that, in addition to the above, require layer closure. Such wounds usually involve deeper layers such as fascia or muscle, to the extent that at least one of deeper layers requires separate closure.

COMPLEX REPAIR includes the repairs of wounds requiring reconstructive surgery, complicated wound closures, skin grafts or unusual and time consuming techniques of repair to obtain the maximum functional and cosmetic result. It may include creation of the defect and necessary preparation for repairs or the debridement and repair of complicated lacerations or avulsions.

Instructions for listing services at time of wound repair.

1. The repaired wound(s) should be measured and recorded in centimeters, whether curved, angular or stellate.

2. When multiple wounds are repaired, add together the lengths of those in the same classification (see above) and report as a single item.

When more than one classification of wounds is repaired, list the more complicated as the primary procedure and the less complicated as the secondary procedure, using modifier '-50'.

3. Decontamination and/or debridement: Only when gross contamination requires prolonged cleansing is this to be considered a separate procedure. Debridement is considered a separate procedure only when appreciable amounts of devitalized or contaminated tissue are removed.

4. Involvement of nerves, blood vessels and tendons: Report under appropriate system (nervous, cardiovascular, musculoskeletal) for repair of these structures. The

repair of the associated wound is included in the primary procedure unless it qualifies as a complex wound, in which case modifier '-50' applies.

Simple ligation of vessels in an open wound is considered as part of any wound closure.

Simple "exploration" of nerves, blood vessels or tendons exposed in an open wound is also considered part of the essential treatment of the wound and is not a separate procedure unless appreciable dissection is required.

		Unit Value	Follow-up Days=	Basic Anes@
REPAIR-SIMPLE				
	(Sum of lengths of repairs)			
12001*	Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk and/or extremities (including hands and feet); up to 2.5 cm	0.4	0	3.0
12002*	2.5 cm to 7.5 cm	0.6	0	3.0
12004*	7.5 cm to 12.5 cm	0.8	0	3.0
12005	12.5 cm to 20.0 cm	1.0	0	3.0
12006	20.0 cm to 30.0 cm	1.2	0	3.0
12007	over 30.0 cm	BR		3.0
12011*	Simple repair of superficial wounds of face, ears, eyelids, nose, lips and/or mucous membranes; up to 2.5 cm	0.6	0	3.0
12013*	2.5 cm to 5.0 cm	0.8	0	3.0
12014	5.0 cm to 7.5 cm	1.0	0	3.0
12015	7.5 cm to 12.5 cm	1.2	0	3.0
12016	12.5 cm to 20.0 cm	1.4	0	3.0
12017	20.0 cm to 30.0 cm	1.6	0	3.0
12018	over 30.0 cm	BR		3.0
12020	Treatment of superficial wound dehiscence; simple closure	BR		3.0
12021	with packing	BR		3.0
	(For extensive or complicated secondary wound closure, see 13160)			
REPAIR-INTERMEDIATE				
12031*	Layer closure of wounds of scalp, axillae, trunk and/or extremities (excluding hands and feet); up to 2.5 cm	0.6	0	3.0
12032*	2.5 cm to 7.5 cm	0.8	0	3.0
12034	7.5 cm to 12.5 cm	1.0	0	3.0
12035	12.5 cm to 20.0 cm	1.2	0	3.0
12036	20.0 cm to 30.0 cm	1.4	0	3.0
12037	over 30.0 cm	BR		3.0
12041*	Layer closure of wounds of neck, hands, feet and/or external genitalia; up to 2.5 cm	0.8	0	3.0
12042	2.5 cm to 7.5 cm	1.0	0	3.0
12044	7.5 cm to 12.5 cm	1.2	0	3.0
12045	12.5 cm to 20.0 cm	1.4	0	3.0
12046	20.0 cm to 30.0 cm	1.6	0	3.0
12047	over 30.0 cm	BR		3.0
12051*	Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; up to 2.5 cm	1.0	0	3.0
12052	2.5 cm to 5.0 cm	1.2	0	3.0
12053	5.0 cm to 7.5 cm	1.4	0	3.0
12054	7.5 cm to 12.5 cm	1.6	0	3.0
12055	12.5 cm to 20.0 cm	1.8	0	3.0
12056	20.0 cm to 30.0 cm	2.0	0	3.0
12057	over 30.0 cm	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-023, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-023, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-023, filed 1/30/74; Order 68-7, § 296-22-023, filed 11/27/68, effective 1/1/69.]

WAC 296-22-024 Repair--Complex. (Reconstructive procedures, complicated wound closure, skin grafts, pedicle flaps)

(For full thickness repair of lip or eyelid, see respective anatomical subsections)

		Unit Value	Follow-up Days=	Basic Anes@
13100	Repair, complex, trunk; 1.0 cm to 2.5 cm	1.2	30	3.0
	(For up to 1.0 cm, see simple or intermediate repairs)			
13101	2.5 cm to 7.5 cm	3.0	30	3.0
13120	Repair, complex, scalp, arms, and/or legs; 1.0 cm to 2.5 cm	1.8	30	3.0
	(For up to 1.0 cm, see simple or intermediate repairs)			
13121	2.5 cm to 7.5 cm	4.0	30	3.0
13131	Repair, complex, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; 1.0 cm to 2.5 cm	2.4	30	3.0
	(For up to 1.0 cm, see simple or intermediate repairs)			
13132	2.5 cm to 7.5 cm	6.0	30	3.0
13150	Repair, complex, eyelids, nose, ears and/or lips; up to 1.0 cm	2.0	30	3.0
	(See also 40650-40654, 67952-67975)			
13151	1.0 cm to 2.5 cm	3.0	30	3.0
13152	2.5 cm to 7.5 cm	8.0	30	3.0
13160	Secondary closure of surgical wound dehiscence, extensive or complicated	BR		3.0
	(For packing or simple secondary wound closure, see 12020, 12021)			
13300	Repair, unusual, complicated, over 7.5 cm, any area	BR		3.0
ADJACENT TISSUE TRANSFER OR REARRANGEMENT				
	(For full thickness repair of lip or eyelid, see respective anatomical subsections)			
	Excision and/or repair by adjacent tissue transfer or rearrangement (e.g., Z-plasty, W-plasty, V-Y plasty, rotation flap, advancement flap, double pedicle flap). When applied in repairing lacerations, the procedures listed must be developed by the surgeon to accomplish the repair. They do not apply when direct closure or rearrangement of traumatic wounds incidentally result in these configurations.			

		Unit Value	Follow-up Days=	Basic Anes@
	(Skin graft necessary to close secondary defect considered an additional procedure)			
14000	Adjacent tissue transfer or rearrangement, trunk; defect up to 10 sq cm	4.0	60	3.0
14001	defect 10 sq cm to 30 sq cm	6.0	60	3.0
14020	Adjacent tissue transfer or rearrangement, scalp, arms and/or legs; defect up to 10 sq cm	6.0	60	3.0
14021	defect 10 sq cm to 30 sq cm	8.0	60	3.0
14040	Adjacent tissue transfer or rearrangement, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; defect up to 10 sq cm	8.0	60	3.0
14041	defect 10 sq cm to 30 sq cm	10.0	60	3.0
14060	Adjacent tissue transfer or rearrangement, eyelids, nose, ears and/or lips; defect up to 10 sq cm	10.0	60	3.0
14061	defect 10 sq cm to 30 sq cm	14.0	60	3.0
	(For eyelid, full thickness, see 67952 et seq.)			
14300	Adjacent tissue transfer or rearrangement, more than 30 sq cm, unusual or complicated, any area	BR		3.0
14350	Filleted finger or toe flap, including preparation of recipient site	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-024, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-024, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-024, filed 1/30/74; Order 68-7, § 296-22-024, filed 11/27/68, effective 1/1/69.]

WAC 296-22-025 Free skin grafts.

Identify by the size and location of the defect (recipient area) and the type of graft; includes simple debridement of granulations or recent avulsion.

When a primary procedure such as orbitectomy, radical mastectomy or deep tumor removal requires skin graft for definitive closure, see appropriate anatomical subsection for primary procedure and this section for skin graft.

(Repair of donor site requiring skin graft or local flaps to be added as additional procedure)

		Unit Value	Follow-up Days=	Basic Anes@
15000	Excisional preparation or creation of recipient site by excision of essentially intact skin (including subcutaneous tissue), scar, or other lesion prior to repair with free skin graft (list as separate service in addition to skin graft)	*3.6		3.0
	(For appropriate skin grafts, see 15050-15261; list the free graft separately by its procedure number when the graft, immediate or delayed is applied)			
*15050	Pinch graft, single or multiple, to cover small ulcer, tip of digit or other minimal open area (except on face), up to defect size 2 cm diameter	*1.2	0	3.0
15100	Split graft, trunk, scalp, arms, legs, hands and/or feet (except multiple digits); up to 100 sq cm or each one percent of body area of infants and children (except 15050)	6.0	45	3.0
15101	each additional 100 sq cm, or each one percent of body area of infants and children, or part thereof	1.2		3.0
15120	Split graft, face, eyelids, mouth, neck, ears, orbits, genitalia, and/or multiple digits; up to 100 sq cm, or each one percent of body area of infants and children (except 15050)	11.0	45	3.0
15121	Each additional 100 sq cm, or each one percent of body area of infants and children, or part thereof	2.0		
	(For eyelids, see also 67961 et seq.)			
15200	Full thickness graft, free, including direct closure of donor site, trunk; up to 20 sq cm	4.0	45	3.0
15201	each additional 20 sq cm	2.0		
15220	Full thickness graft, free, including direct closure of donor site, scalp, arms and/or legs; up to 20 sq cm	6.0	45	3.0
15221	each additional 20 sq cm	3.0		
15240	Full thickness graft, free, including direct closure of donor site, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; up to 20 sq cm	8.0	45	3.0
	(For finger tip graft, see 15050)			
	(For repair of syndactyly, fingers, see 26560-26562)			
15241	each additional 20 sq cm	4.0		3.0
15260	Full thickness graft, free, including direct closure of donor site, nose, ears, eyelids, and/or lips; up to 20 cm	10.0	45	3.0
15261	each additional 20 sq cm	5.0		
	(For eyelids, see also 67961 et seq.)			
	(Repair of donor site requiring skin graft or local flaps, to be added as additional separate procedure)			
15350	Homograft, skin	5.0	45	3.0
15400	Heterograft, skin	6.0	45	3.0
15410	Free transplantation of skin flap by microsurgical technique, including microvascular anastomosis; up to 100 sq cm	5.0	45	3.0
15412	between 101 and 160 sq cm	6.0	45	3.0
15414	between 161 and 230 sq cm	7.0	45	3.0
15416	over 230 sq cm	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
	PEDICLE FLAPS (SKIN AND DEEP TISSUES)			
	Regions listed refer to the recipient area (not donor site) when flap is being attached in transfer or to final site.			
	Regions listed refer to donor site when tube is formed for later transfer or when "delay" of flap is prior to transfer.			
	Procedures 15500–15730 do not include extensive immobilization, e.g., large plaster casts and other immobilizing devices are considered additional separate procedures.			
	(Repair of donor site requiring skin graft or local flaps is considered an additional separate procedure)			
15500	Formation of tube pedicle without transfer, or major "delay" of large flap without transfer; on trunk	7.0	45	3.0
15505	on scalp, arms or legs	7.0	45	3.0
15510	on forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands or feet	7.0	45	3.0
15515	on eyelids, nose, ears or lips	7.0	45	3.0
15540	Primary attachment of open or tubed pedicle flap to recipient site requiring minimal preparation; to trunk	9.0	45	3.0
15545	to scalp, arms and legs	9.0	45	3.0
15550	to forehead, cheeks, chin, mouth, neck, axillae, genitalia, or hands, feet	9.0	45	3.0
	(For cross finger pedicle flap, see 15580)			
15555	to eyelids, nose, ears and lips	9.0	45	3.0
15580	cross finger pedicle flap, including free graft to donor site	9.0	45	3.0
	(For major debridement or excisional preparation of recipient area at the time of attachment of pedicle flap, see 15700–15730)			
15600	Intermediate "delay" of any flap, primary "delay" of small flap, or sectioning pedicle of tubed or direct flap; at trunk	4.0	45	3.0
15610	at scalp, arms and legs	5.0	45	3.0
15620	at forehead, cheeks, chin, neck, axillae, genitalia, hands (except 15625), or feet	6.0	45	3.0
15625	section pedicle of cross finger flap	6.0	45	3.0
15630	at eyelids, nose, ears and lips	6.0	45	3.0
15650	Transfer, intermediate, of any pedicle flap (e.g., abdomen to wrist, "Walking" tube), any location	BR+		3.0
15700	Excision of lesion and/or excisional preparation of recipient site and attachment of direct or tubed pedicle flap; trunk	9.0	45	3.0
15710	scalp, arms and legs	11.0	45	3.0
15720	forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands or feet	16.0	45	3.0
15730	eyelids, nose, ears or lips	16.0	45	3.0
	(For eyelids, nose, ears, or lips, see also anatomical area)			
	(For revision, defatting or rearranging of transferred pedicle flap or skin graft, see 13100–14300)			
	OTHER GRAFTS			
15740	Graft, island pedicle flap	12.0	90	3.0
15745	myocutaneous flap	BR	90	3.0
15750	neurovascular pedicle flap	10.0	90	3.0
15755	free flap (microvascular transfer)	BR	90	3.0
15760	composite (full thickness of external ear or nasal ala), including primary closure, donor area	10.0	45	3.0
15770	derma–fat–fascia	12.0	60	3.0
15775	Punch graft for hair transplant; 1 to 15 punch grafts	0.5	90	3.0
15776	more than 15 punch grafts	BR+		3.0
	(For strip transplant, 15220)			
	MISCELLANEOUS PROCEDURES			
15780	Abrasion of skin for removal of scars, tattoos, actinic changes (keratoses), primary or secondary; total face	12.0	90	3.0
15785	regional (1/4 face, cheeks, chin, forehead or elsewhere)	4.0	90	3.0
15786*	Abrasion; single lesion (e.g., keratosis, scar)	0.5	0	3.0
15787	each additional four lesions or less	0.3		3.0
15790	Superficial chemosurgery (acid peel) total face and neck	BR+		3.0
15791	regional, face, neck, or elsewhere	BR+		3.0
15800	Abrasion of skin, total face, with combined superficial chemosurgery (acid peel) of remaining face (eyelids, neck, shoulders)	16.0	90	3.0
15810	Salabrasion; up to 20 sq cm	BR		3.0
15811	20 sq cm and over	BR		3.0
15820	Blepharoplasty, lower eyelids;	12.0	30	3.0
15821	with extensive herniated fat pads	14.0	30	3.0
	(See also 67916, 67917, 67923, 67924)			
15822	Rhytidectomy; upper eyelids	8.0	30	3.0
15823	with excessive skin weighting down lids	12.0	30	3.0
	(For bilateral blepharoplasty, add modifier –50)			
	(See also 67916, 67917, 67923, 67924)			
15824	Rhytidectomy; forehead	10.0	30	3.0
15826	glabellar frown	8.0	30	3.0
	(15827 is deleted. To report use 15838)			
15828	cheeks, chin and neck	30.0	45	3.0
15829	subcutaneous musculoaponeurotic system (SMAS) flap	BR		3.0
	(For bilateral rhytidectomy, add modifier –50)			

		Unit Value	Follow-up Days=	Basic Anes@
15831	Excision, excessive skin and subcutaneous tissue (including lipectomy); abdomen (abdominoplasty)	30.0	45	3.0
15832	thighs	25.0	45	3.0
15833	legs	30.0	45	3.0
15834	hips	30.0	45	3.0
15835	buttocks	30.0	45	3.0
15836	arms	25.0	45	3.0
15837	forearms	25.0	45	3.0
15838	submental fat pad	BR		3.0
15839	other area			
	(For bilateral procedure, add modifier -50)	BR		3.0
15840	Graft for facial nerve paralysis; free fascia graft, (including obtaining fascia)	30.0	90	3.0
	(For bilateral procedure, add modifier -50)			
15841	free muscle graft (including obtaining graft)	35.0	45	3.0
15842	free muscle graft by microsurgical technique	35.0	45	3.0
15845	reanimation, muscle transfers	BR+		3.0
	(For intraveneous fluorescein examination of blood flow in graft or flap, see 15860)			
	(For nerve transfers, decompression, or repair, see 64830-64876, 64905-64907, 69720-69725, 69740-69745, 69955)			
15851	Removal of sutures in hospital or emergency room under anesthesia	BR		3.0
15860	Intravenous injection of agent (e.g., fluorescein) to test blood flow in flap or graft	BR		3.0
DECUBITUS ULCERS (PRESSURE SORES)				
15920	Coccygectomy; primary suture	BR		3.0
15922	with flap closure	BR		3.0
	(15930 has been deleted. To report, use 15934)			
15931	Excision, sacral decubitus ulcer; with primary suture	13.0		3.0
	(15932 has been deleted)			
15933	with ostectomy	BR		3.0
15934	Excision, sacral pressure ulcer, with local or regional skin flap closure (e.g., advancement, rotation, rhomboid, bipedicle);	20.0		3.0
15935	with ostectomy	BR		3.0
15936	Excision, sacral pressure ulcer, with other flap closure;	BR		3.0
15937	with ostectomy	BR		3.0
	(To identify other flap closure, use also code number for specific flap)			
15940	Excision, ischial decubitus ulcer; direct suture	BR		3.0
15941	with ostectomy (ischiectomy)	BR		3.0
	(15942, 15943 have been deleted. To report, use 15944-15946)			
15944	Excision, ischial pressure ulcer, with local or regional skin flap closure;	BR		3.0
15945	with ostectomy	BR		3.0
15946	Excision, ischial pressure ulcer, with ostectomy, with muscle flap or myocutaneous flap closure	BR		3.0
	(To identify muscle or myocutaneous flap closure, use also code number for specific flap)			
15950	Excision, trochanteric pressure ulcer; with primary suture	BR		3.0
15951	with ostectomy	BR		3.0
15952	Excision, trochanteric pressure ulcer, with local rotation skin flap closure	BR		3.0
15953	skin flap closure, with ostectomy	BR		3.0
15954	Excision, trochanteric pressure ulcer, with bipedicle flap closure;	BR		3.0
15955	with ostectomy	BR		3.0
15956	Excision, trochanteric pressure ulcer, with muscle or myocutaneous flap closure;	BR		3.0
15958	with ostectomy	BR		3.0
	(To identify muscle or myocutaneous flap closure, use also code number for specific flap)			
15960	Excision, heel pressure ulcer; with primary suture	BR		3.0
15961	with ostectomy	BR		3.0
	(15962, 15963, have been deleted. To report use 15964-15967)			
15964	Excision, heel pressure ulcer, with local skin flap closure;	BR		3.0
15965	with ostectomy	BR		3.0
15966	Excision, heel pressure ulcer, with other flap closure;	BR		3.0
15967	with ostectomy	BR		3.0
	(To identify other flap closure, use also code number for specific flap)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-025, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-025, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-025, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-025, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-025, filed 1/30/74; Order 68-7, § 296-22-025, filed 11/27/68, effective 1/1/69.]

WAC 296-22-026 Burns, local treatment.

		Unit Value	Follow-up Days=	Basic Anes@
15970	Excision, leg pressure ulcer, with primary suture;	BR		3.0
15971	with ostectomy	BR		3.0
15972	Excision, leg pressure ulcer, with local skin flap(s);	BR		3.0
15973	with ostectomy	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
15974	Excision, leg pressure ulcer, with muscle or myocutaneous flap closure;	BR		3.0
15975	with ostectomy	BR		3.0
	(To identify muscle or myocutaneous flap closure, use also code number for specific flap)			
15980	Excision, knee pressure ulcer, with local skin flap closure;	BR		3.0
15981	with ostectomy	BR		3.0
15982	Excision, knee pressure ulcer, with other flap closure;	BR		3.0
15983	with ostectomy	BR		3.0
	(To identify other flap closure, use also code number for specific flap)			
15999	Unlisted procedure, excision pressure ulcer	BR		3.0
	(For free skin graft to close ulcer or donor site, see 15000 et seq.)			

Procedures 16000–16030 refer to local treatment of burned surface only.

List percentage of body surface involved and depth of burn.

(For necessary related medical services (e.g., hospital visits, detention) in management of burned patients, see appropriate services in medicine section.)

		Unit Value	Follow-up Days=	Basic Anes@
	(For skin graft, see 15100–15730)			
	(For necessary related medical services (e.g., hospital visits, detention) in management of burned patients, see appropriate services in Medicine Section)			
16000	Initial treatment, first degree burn, when no more than local treatment is required	0.3	0	
16010	Dressings and/or debridement, initial or subsequent; under anesthesia, small	0.8	0	3.0
16015	under anesthesia, medium or large, or with major debridement	*2.0	0	3.0
*16020	without anesthesia, office or hospital, small	*0.4	0	
*16025	without anesthesia, medium (e.g., whole face or whole extremity)	*0.6	0	
16030	without anesthesia, large (e.g., more than one extremity)	0.8	0	
16035	Escharotomy	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-026, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-026, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-026, filed 1/30/74; Order 68-7, § 296-22-026, filed 11/27/68, effective 1/1/69.]

WAC 296-22-027 Destruction.

		Unit Value	Follow-up Days=	Basic Anes@
	(For electrosurgical destruction of malignant skin lesions, see 11600–11646)			
	(For condylomata, see 46900–46933, 54050–54065, 56500–56515)			
*17000	Destruction by any method, with or without surgical curettement, all facial lesions or premalignant lesions in any location, including local anesthesia; one lesion	*0.6	0	3.0
17001	second and third lesions, each	0.3		
17002	over 3 lesions, each additional lesion	0.15		
17010	complicated lesion(s)	BR		3.0
*17100	Destruction by any method of benign skin lesions on any area other than the face, including local anesthesia; one lesion	*0.4	0	3.0
17101	second lesion	0.2		
17102	over two lesions, each additional lesion up to 15 lesions	0.1		
17104	15 or more lesions	0.1		
17105	complicated lesions	BR		3.0
*17110	Destruction by any method of flat (plane, juvenile) warts or molluscum contagiosum, milia, up to 15 lesions	*0.4	0	3.0
	(Retreatment same as office visit)			
*17200	Electrosurgical destruction of multiple tags; up to 15 lesions	*0.4	0	3.0
17201	each additional 10 lesions	0.2		3.0
	(For excision of fibrocutaneous tags, see 11200, 11201)			
*17250	Chemical cauterization of a wound	BR		3.0
	(17300–17302 have been deleted. To report use 17303–17310)			
17303	Chemosurgery (Moh's technique), first stage, fixed tissue technique, including the removal of all gross tumor and application of fixative	BR		3.0
17304	Chemosurgery (Moh's technique); first stage, fresh tissue technique, including the removal of all gross tumor and delineation of margins by means of up to five horizontal, microscopic specimens	BR		3.0
17305	second stage, fixed or fresh tissue, up to 5 specimens	BR		3.0
17306	third stage, fixed or fresh tissue, up to 5 specimens	BR		3.0
17307	additional stage(s), up to 5 specimens, each stage	BR		3.0
17310	more than 5 specimens, fixed or fresh tissue, any stage	BR		3.0
	(For initiation or follow-up care of topical chemotherapy (e.g. 5-FU or similar agents), see appropriate office visits)			
	(For initiation or follow-up care of topical chemotherapy (e.g., 5-			

		Unit Value	Follow-up Days=	Basic Anes@
	FU or similar agents), see appropriate office visits)			
*17340	Cryotherapy (CO_2 slush, liquid N_2)	*0.3	0	
*17360	Chemical exfoliation for acne (e.g., acne paste, acid)	*0.3	0	
*17380	Electrolysis epilation, each 1/2 hour	*0.6	0	
	(For actinotherapy, see 96900)			
17999	Unlisted procedure, skin, mucous membrane and subcutaneous tissue	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-027, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-027, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-027, filed 1/30/74; Order 68-7, § 296-22-027, filed 11/27/68, effective 1/1/69.]

WAC 296-22-030 Breast.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*19000	Puncture aspiration of cyst;	*0.4	0	
19001	each additional cyst	0.1	0	
19020	Mastotomy with exploration or drainage of abscess, deep	2.6	14	3.0
19030	Injection procedure only for mammary ductogram or galactogram	0.4		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-22-030, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-030, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-030, filed 1/30/74; Order 68-7, § 296-22-030, filed 11/27/68, effective 1/1/69.]

WAC 296-22-031 Breast.

		Unit Value	Follow-up Days=	Basic Anes@
EXCISION				
	(All codes for bilateral procedures have been deleted. To report, add modifier -50)			
*19100	Biopsy of breast, needle (separate procedure)	*0.6	0	
19101	incisional	3.6	30	3.0
19120	Excision of cyst, fibroadenoma or other benign tumor, aberrant breast tissue, duct lesion or nipple lesion (except 19140-19161), male or female, one or more lesions;	5.0	30	3.0
19140	Mastectomy for gynecomastia through circumareolar or other incision,	8.0	60	3.0
19160	Mastectomy, partial (quadrectomy or more);	6.0	60	3.0
19162	with axillary lymphadenectomy	BR		3.0
19180	Mastectomy, simple complete;	8.0	45	3.0
	(For immediate or delayed insertion of implant, use 19340 or 19342)			
	(For gynecomastia, see 19140, 19141)			
19182	Mastectomy, subcutaneous;	10.0	60	3.0
	(When performed in conjunction with reduction mammaplasty, use also 19318)			
	(19184-19187 have been deleted. To report, use 19182 with 19340 or 19342)			
	(For supplemental skills of two surgeons, see WAC 296-22-010 item 5 and modifier -62)			
	(For supply of prosthetic implant, see 99070)			
19200	Mastectomy, radical, including breast, pectoral muscles, axillary lymph nodes	18.0	60	3.0
	(19211-19216 have been deleted. To report, use 19200 with 19340 or 19342)			
19220	Mastectomy, radical, including breast, pectoral muscles, axillary and internal mammary lymph nodes (Urban type operation)	26.0	60	11.0
	(19224-19229 have been deleted. To report, use 19220 with 19340 or 19342)			
19240	Mastectomy, modified radical, with modified axillary dissection but leaving pectoral muscles	16.0	60	3.0
	(19250-19255 have been deleted. To report, use 19240 with 19340 or 19342)			
	(For supply of prosthetic implant, see 99070)			
19260	Excision of chest wall tumor including ribs	BR+		9.0
19271	Excision of chest wall tumor involving ribs, with plastic reconstruction; without mediastinal lymphadenectomy	BR+		9.0
19272	with mediastinal lymphadenectomy	BR		9.0
Repair and reconstruction				
	(19300-19304 have been deleted. To report, see 19316, 19318)			
	(19310, 19311 have been deleted. To report, use 19325)			
	(All codes for bilateral procedures have been deleted. To report, add modifier -50)			
19316	Mastopexy	BR	90	3.0
19318	Reduction mammaplasty	BR	90	3.0
19324	Mammaplasty, augmentation; without prosthetic implant	BR	90	3.0
19325	with prosthetic implant	BR	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For flap or graft, use also appropriate number)			
19328	Removal of intact mammary implant	BR	30	3.0
19330	Removal of mammary implant material	BR	30	3.0
19340	Immediate insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction	BR	30	3.0
19342	Delayed insertion of breast prosthesis following mastopexy, mastectomy or in reconstruction	BR	30	3.0
	(For supply of implant, use 99070)			
	(For preparation of custom breast implant, see 19396)			
19350	Reconstruction of nipple and/or areola	BR	30	3.0
19360	Breast reconstruction with muscle or myocutaneous flap	BR	90	3.0
	(Use also code number for specific flap)			
19364	Breast reconstruction with free flap	BR	90	3.0
	(Use also code number for specific flap)			
19366	Breast reconstruction with other technique	BR	90	3.0
	(For microsurgical technique, add modifier -20)			
	(For insertion of prosthesis, use also 19340 or 19342)			
19370	Open periprosthetic capsulotomy, breast	BR		3.0
19371	Periprosthetic capsulectomy, breast	BR		3.0
19380	Revision of reconstructed breast	BR		3.0
19396	Preparation of moulage for custom breast implant	BR		3.0
19499	Unlisted procedure, breast	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-031, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-031, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-031, filed 1/30/74; Order 68-7, § 296-22-031, filed 11/27/68, effective 1/1/69.]

MUSCULOSKELETAL SYSTEM

WAC 296-22-035 Musculoskeletal system.

NOTES

General: Certain procedures (e.g., incision of soft tissue abscess, drainage of infected bursa, biopsy, arthrocentesis, insertion of wires or pins, etc.) are common to all anatomic areas and are listed below under "general." Specific procedures are listed under the appropriate anatomic areas. Casts and strapping are listed at the end of the section.

Listed values include the application and removal of the first cast or traction device only. Subsequent replacement of cast and/or traction device during the listed period of follow-up care warrants additional charges.

Rereduction of a fracture and/or dislocation, performed by the primary physician, may be identified by the addition of modifier '-76' to the usual procedure number and value as appropriate to indicate "repeat procedure by same physician" (see guidelines).

Bone, cartilage and fascial grafts: Listed values for most graft procedures include obtaining of the graft. When a second surgeon obtains the graft, the value of the total procedure may be apportioned between the surgeons. Modifier -62 and procedures 20900-20922 are not to be used in conjunction with procedures which include a graft as part of the descriptor. Procedures 20900-20922 can be used in those unusual circumstances when a graft is used that is not included in the descriptor.

When an alloplastic implant or nonautogenous graft is used in a procedure which "includes obtaining graft," the value is to be reduced by an appropriate amount. Identify this circumstance by adding modifier -52 to the procedure number.

Plastic and metallic implant or nonautogenous graft materials are to be valued at the cost to the physician including an appropriate handling or shaping charge where applicable. See procedure 99070.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-035, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-035, filed 1/30/74; Order 68-7, § 296-22-035, filed 11/27/68, effective 1/1/69.]

WAC 296-22-036 General.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*20000	Incision of soft tissue abscess, secondary to osteomyelitis; superficial	*0.4	0	3.0
20005	deep or complicated	BR		3.0
20010	with suction irrigation	BR		3.0
*20040	Drainage of infected bursa	*0.6	0	3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-036, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-036, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-036, filed 1/30/74; Order 68-7, § 296-22-036, filed 11/27/68, effective 1/1/69.]

WAC 296-22-037 Excision.

		Unit Value	Follow-up Days=	Basic Anes@
	(For aspiration of bone marrow, see 85095)			
20200	Biopsy, muscle; superficial	1.2	7	3.0
20205	deep	2.4	15	3.0
20206*	Biopsy, muscle, percutaneous needle	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
	(For percutaneous needle biopsy of soft tissue of spine, see 22012)			
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
	(For excision of muscle tumor, deep, see specific anatomic section)			
20220	Biopsy, bone, trocar or needle; superficial (e.g., ilium, sternum, spinous process, ribs)	1.2	7	3.0
20225	deep (vertebral body, femur)	4.0	15	3.0
20240	Biopsy, excisional; superficial (e.g., ilium, sternum, spinous process, ribs,) trochanter of femur	3.0	21	3.0
20245	deep (e.g., humerus, ischium, femur)	5.0	30	3.0
20250	Biopsy, vertebral body, open; thoracic	BR		3.0
20251	lumbar or cervical	BR		3.0
	(For sequestrectomy, osteomyelitis or drainage of bone abscess, see anatomical area)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-037, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-037, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-037, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-037, filed 1/30/74; Order 68-7, § 296-22-037, filed 11/27/68, effective 1/1/69.]

WAC 296-22-038 Introduction or removal.

		Unit Value	Follow-up Days=	Basic Anes@
	(For injection procedure for arthrography, see anatomical area)			
20500	Injection of sinus tract; therapeutic (separate procedure)	0.4	0	
20501*	diagnostic (sinogram) (separate procedure)	1.0	0	
*20520	Removal of foreign body in muscle; simple	*1.2	0	3.0
20525	deep or complicated	BR+		3.0
*20550	Injection, tendon sheath, ligament or trigger points	*0.4	0	
*20600	Arthrocentesis, aspiration and/or injection; small joint or bursa (e.g., fingers, toes)	*0.3	0	
*20605	intermediate joint or bursa (e.g., temporomandibular, acromioclavicular, wrist, elbow or ankle; olecranon bursa)	*0.4	0	
*20610	major joint or bursa (e.g., shoulder, hip, knee joint, subacromial bursa)	*0.6	0	
20615	Aspiration and injection for treatment of bone cyst	0.6		3.0
*20650	Insertion of wire or pin for skeletal traction, including removal (separate procedure)	*1.2	0	3.0
20660	Application of tongs or caliper, including removal (separate procedure)	3.0	0	3.0
20661	Application of halo; cranial	3.0	0	3.0
20662	pelvic	3.0	0	3.0
20663	femoral	3.0	0	3.0
20665	Removal of tongs or halo applied by another physician	0.3	0	
*20670	Removal of implant; superficial, (e.g., buried wire, pin or rod) (separate procedure)	*0.6	0	3.0
20680	deep (e.g., buried wire, pin, screw, metal band, nail, rod or plate)	3.6	21	3.0
20690	Application of external fixation system (e.g., Hoffmann apparatus); standard configuration	BR		3.0
20691	other than standard configuration	BR		3.0
	(List numbers 20690 or 20691 in addition to code for treatment of closed or open fracture)			
	REPAIR			
	(For debridement as a separate procedure (e.g., in traumatic wound) involving soft tissue and/or bone, see 11043, 11044)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-22-038, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-038, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-038, filed 1/30/74; Order 68-7, § 296-22-038, filed 11/27/68, effective 1/1/69.]

WAC 296-22-039 Reimplantation.

		Unit Value	Follow-up Days=	Basic Anes@
	REIMPLANTATION			
20802	Reimplantation, arm; complete	BR		3.0
20804	incomplete (nonviable extremity with soft tissue pedicle)	BR		3.0
20808	Reimplantation, hand; complete	BR		3.0
20812	incomplete (nonviable extremity with soft tissue pedicle)	BR		3.0
20816	Reimplantation, digit; complete	BR		3.0
20820	incomplete (nonviable extremity with soft tissue pedicle)	BR		3.0
20832	Replantation, leg; complete	BR		3.0
20834	incomplete (nonviable extremity with soft tissue pedicle)	BR		3.0
20838	Replantation, foot; complete	BR		3.0
20840	incomplete (nonviable extremity with soft tissue pedicle)	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-039, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-039, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-039, filed 1/30/74; Order 68-7, § 296-22-039, filed 11/27/68, effective 1/1/69.]

WAC 296-22-040 Grafts (or implants).

Codes for obtaining autogenous bone, cartilage, tendon, fascia lata grafts, or other tissues, the rough separate incisions are to be used only when graft is not already

listed as part of basic procedure. Listed value applies and WAC 296-22-010, item 7 is not to be applied to procedures 20900-20922.

(For alloplastic or heterologous grafts, see instructions, WAC 296-22-035)

		Unit Value	Follow-up Days=	Basic Anes@
20900	Bone graft, any donor area; minor or small (e.g., dowel or button)	2.4	0	3.0
20902	major or large	4.8	0	3.0
20910	Cartilage graft, costochondral	4.8	0	3.0
20920	Fascia lata graft; by stripper	2.0	0	3.0
20922	by incision and area exposure, complex or sheet	4.0	0	3.0
20924	Tendon graft, from a distance (e.g., palmaris, toe extensor, plantaris)	BR		3.0
20926	Tissue grafts, other (e.g., paratenon, fat, dermis, etc.)	BR		3.0
	MISCELLANEOUS			
20950	Monitoring of interstitial fluid pressure (e.g., wick catheter technique, needle manometer technique) in detection of muscle compartment syndrome	BR		3.0
20955	Fibula graft with microvascular anastomosis	BR		3.0
20960	Rib graft with microvascular anastomosis	BR		3.0
20970	Osteocutaneous graft (iliac crest and inguinal groin flap) with microvascular anastomosis	BR		3.0
20971	rib	BR		3.0
20972	metatarsal	BR		3.0
20973	great toe with web space	BR		3.0
20974	Electrical stimulation to aid bone healing; noninvasive (nonoperative)	BR		3.0
	(use 20974 in addition to code for appropriate bony procedure when applicable)			
20975	invasive (operative)	BR		3.0
	(use 20975 in addition to code for appropriate bony procedure when applicable)			
20976	percutaneous insertion of electrodes	BR		3.0
	(use 20976 in addition to code for appropriate bony procedure when applicable)			
20999	Unlisted procedure, musculoskeletal system, general	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-040, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-040, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-040, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-040, filed 1/30/74; Order 68-7, § 296-22-040, filed 11/27/68, effective 1/1/69.]

WAC 296-22-042 Head.

		Unit Value	Follow-up Days=	Basic Anes@
	(Skull, facial bones and temporomandibular joint)			
	INCISION			
	(For drainage of superficial abscess and hematoma, see 20000)			
	(For removal of embedded foreign body from dentoalveolar structure, see 41805, 41806)			
21010	Arthrotomy, temporomandibular joint; unilateral	BR		3.0
21011	bilateral	BR		3.0
	EXCISION			
	(For biopsy, see 20220, 20240)			
21020	Craniectomy for sequestrectomy	BR		8.0
	(For craniectomy for osteomyelitis, see 61501)			
	(For other craniectomies, see 61304 et seq.)			
21030	Excision of benign tumor or cyst of facial bone other than mandible	BR		5.0
21034	Excision of malignant tumor of facial bone other than mandible	BR		5.0
21040	Excision of benign cyst or tumor of mandible; simple	5.0	90	5.0
21041	complex	BR		5.0
21044	Excision of malignant tumor of mandible;	BR		5.0
21045	radical resection	BR		5.0
	(For bone graft, see 21215)			
21050	Arthrectomy, temporomandibular joint; unilateral	18.0	90	5.0
21051	bilateral	20.0	90	5.0
21060	Meniscectomy, temporomandibular joint; unilateral	18.0	90	5.0
21061	bilateral	20.0	90	5.0
21070	Coronoidectomy (separate procedure); unilateral	18.0	90	5.0
21071	bilateral	20.0	90	5.0
	INTRODUCTION OR REMOVAL			
	(For application or removal of caliper or tongs, see 20660, 20665)			
*21100	Application of halo type appliance for maxillofacial fixation, includes removal (separate procedure)	*2.0	0	3.0
21110	Application of interdental fixation device for conditions other than fracture or dislocation	8.0	90	3.0
21116	Injection procedure for temporomandibular arthrotomography	BR		
	(For temporomandibular arthrotomography, see 70332)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For cranioplasty, see 62140-62145)			
21200	Osteoplasty of mandible for prognathism, micrognathism	30.0	90	5.0
21202	mandible, segmental	BR	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
21203	mandibular ramus (osteotomy)	BR	90	5.0
21204	maxilla, total	BR	90	5.0
21206	maxilla, segmental	BR	90	5.0
21207	reduction genioplasty	BR		5.0
21210	Graft, bone; nasal, maxillary and malar areas (includes obtaining graft)	20.0	120	5.0
	(For cleft palate repair, see 42200–42225)			
21215	mandible (includes obtaining graft)	20.0	120	5.0
21230	Graft; rib cartilage, autogenous, to face, chin, nose or ear (includes obtaining graft)	18.0	120	5.0
21235	ear cartilage to nose or ear (includes obtaining graft)	12.0	60	5.0
21239	Implant, chin, homologous, heterologous, or alloplastic	BR		5.0
21240	Arthroplasty, temporomandibular joint; unilateral	BR+		5.0
	(21241 has been deleted. To report bilateral procedure, use modifier –50)			
	(If bone or cartilage graft is used for temporomandibular joint arthroplasty, use 20900–20910)			
21242	Arthroplasty, temporomandibular joint, with alloplastic material (e.g., silicone)	BR		5.0
21250	Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); without bone graft	BR		5.0
21254	with bone graft	BR		5.0
21260	Orbital hypertelorism correction (periorbital) osteotomies, bilateral, with bone grafts; extracranial approach	BR		5.0
21261	combined intra– and extracranial approach	BR		5.0
21263	with forehead advancement	BR		5.0
21267	Orbital repositioning, periorbital osteotomies, unilateral, with bone grafts; extracranial approach	BR		5.0
21268	combined intra– and extracranial approach	BR		5.0
21270	Reconstruction for Treacher Collins syndrome (periorbital and zygomatic reconstruction with multiple bone grafts)	BR		5.0
21275	Secondary revision for orbitocraniofacial reconstruction	BR		5.0
	(For reconstruction of skull by bone flaps, see 61555)			
21280	Medial canthoplasty	BR		5.0
21282	Lateral canthopexy	BR		5.0
21295	Reduction of masseter muscle (e.g., treatment of benign masseteric hypertrophy); extraoral approach	BR		5.0
21296	intraoral approach	BR		5.0

FRACTURE AND/OR DISLOCATION

		Unit Value	Follow-up Days=	Basic Anes@
21300	Treatment of closed skull fracture without operation	Sv.&		
	(For operative repair, see 62000–62010)			
21310	Treatment of closed or open nasal fracture without manipulation	Sv.&		
*21315	Manipulative treatment nasal bone fracture; without stabilization	*1.1	0	3.0
21320	with stabilization	3.0	90	3.0
21325	Open treatment of nasal fracture; uncomplicated	4.0	90	3.0
21330	complicated, with internal and/or external skeletal fixation	9.5	90	3.0
21335	with concomitant open of fractured septum	17.0	90	3.0
21337	Treatment of closed nasal septal fracture	BR	90	3.0
21338	Open treatment of nasoethmoid fracture; without external fixation	BR	90	3.0
21339	with external fixation	BR	90	3.0
21340	Treatment of closed or open nasoethmoid complex fracture, with splint, wire or headcap fixation, including repair of canthal ligaments and/or the nasolacrimal apparatus	BR		3.0
21345	Treatment of nasomaxillary complex fracture (LeFort II type), with interdental wire fixation or fixation of denture or splint	BR		3.0
21346	Open treatment of nasomaxillary complex fracture (LeFort II type); with wiring and/or local fixation	BR		3.0
21347	with multiple approaches	BR		3.0
	(21350 has been deleted. If necessary to report, use appropriate medical encounter code)			
*21355	Manipulative treatment of closed or open fracture of malar area, including zygomatic arch and malar tripod, towel clip technique	*1.0	2	3.0
21360	Open treatment of closed or open depressed malar fracture, including zygomatic arch and malar tripod	7.0	90	3.0
21365	Open treatment of closed or open complicated (e.g., multiple fractures) of malar area, including zygomatic arch and malar tripod, with internal skeletal fixation and multiple surgical approaches	13.0	90	3.0
	(21380 has been deleted. If necessary to report, use appropriate medical encounter code)			
21385	Open treatment of orbital floor "blowout" fracture; transantral approach (Caldwell–Luc type operation)	12.0	90	3.0
21386	periorbital approach	13.0	90	3.0
21387	combined approach	15.0	90	3.0
21390	periorbital approach, with alloplastic or other implant	14.0	90	3.0
21395	periorbital approach with			

		Unit Value	Follow-up Days=	Basic Anes@
	bone graft (includes obtaining graft)	18.0	90	3.0
21400	Treatment of fracture of orbit, except "blowout"; without manipulation	SV		
21401	with manipulation	6.0	90	3.0
21406	Open treatment of fracture of orbit, except "blowout"; without implant	7.0	90	3.0
21407	with implant	8.0	90	3.0
	(21420 has been deleted. If necessary to report, use appropriate medical encounter code)			
21421	Treatment of palatal or alveolar ridge fractures (LeFort I type); closed manipulation with interdental wire fixation or fixation of denture or splint	7.0	90	3.0
21422	open treatment	12.0	90	3.0
21431	Treatment of craniofacial separation (LeFort III type) using interdental wire fixation of denture or splint	8.0	90	4.0
21432	Open treatment of craniofacial separation (LeFort III type); with wiring and/or local fixation	BR		4.0
21433	complicated (e.g., multiple approaches)	BR		5.0
21435	complicated, fixation by head cap, halo device, multiple surgical approaches, internal fixation, and/or wiring teeth	BR		5.0
	(For removal of internal or external fixation device, see 20670)			
21440	Manipulative treatment of alveolar ridge fracture (separate procedure)	BR		5.0
21445	Open treatment of alveolar ridge fracture (separate procedure)	BR		5.0
21450	Treatment of closed or open mandibular fracture without manipulation	Sv.&		
21451	with manipulation, may include external fixation	BR		5.0
21452	Treatment of open mandibular fracture; without manipulation	BR		5.0
21453	with manipulation	BR		5.0
21454	Open treatment of closed or open mandibular fracture with external fixation	BR		5.0
21455	Closed manipulative treatment by interdental fixation of closed or open mandibular fracture	8.0	90	5.0
21461	Open treatment of closed or open mandibular fracture; with or without interdental fixation	16.0	90	5.0
21462	with interdental fixation	16.0	90	5.0
21465	Open treatment of mandibular condylar fracture	BR		5.0
21470	Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring of dentures or splints	BR		5.0
21480	Uncomplicated treatment of temperomandibular dislocation, initial or subsequent	Sv.&		3.0
21485	Complicated manipulate treatment of temperomandibular dislocation, initial or subsequent	BR		3.0
21490	Open treatment of temperomandibular dislocation	BR		3.0
	(For interdental wire fixation, see 21462)			
21493	Treatment of closed or open hyoid fracture; without manipulation	SV		
21494	with manipulation	7.0	90	3.0
21495	Open treatment of closed or open hyoid fracture	8.0	90	3.0
	(For treatment of fracture of larynx, see 31584–31586)			
21497	Interdental wiring, for condition other than fracture	BR		3.0
21499	Unlisted procedure, head	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–22–042, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–22–042, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–042, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–042, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–042, filed 1/30/74.]

WAC 296-22-051 Neck (soft tissues) and thorax.

		Unit Value	Follow-up Days=	Basic Anes@
	(For cervical spine, see 22100, et seq.)			
	(For injection of fracture site or trigger point, see 20550)			
	(For abdominal fascial transplant, see 22910)			
	INCISION			
	(For incision and drainage of abscess or hematoma, superficial, see 10060)			
21501	Incision and drainage, deep abscess or hematoma;	5.0	30	3.0
21502	with partial rib ostectomy	6.0	30	3.0
21510	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	7.0	30	3.0
21511	with suction irrigation	8.0	30	3.0
	EXCISION			
21550	Excisional biopsy, soft tissues	7.0	30	3.0
21555	Excision benign tumor; subcutaneous	7.0	30	3.0
21556	deep, subfascial, intramuscular	8.0	30	3.0
	(For excision of chest wall tumor involving ribs, e.g., radical excision, see 19260, 19270)			
21600	Excision of rib, partial	6.0	60	5.0
	(For radical resection of chest wall and rib cage for tumor, see 19260)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For radical debridement of chest wall and rib cage for injury, see 11040–11044)			
21610	Costotransversectomy (separate procedure)	BR		5.0
21615	Excision first and/or cervical rib for outlet compression syndrome or other cause;	16.6	60	
21616	with sympathectomy	BR		
21620	Ostectomy of sternum, partial	BR		5.0
21630	Radical resection of sternum for tumor;	BR		5.0
21632	with mediastinal lymphadenectomy	BR		5.0
21633	for osteomyelitis	BR		5.0
	REPAIR, REVISION OR RECONSTRUCTION			
	(For superficial wound, see general section under Repair–Simple)			
21700	Division of scalenus anticus; without resection of cervical rib	10.0	60	3.0
21705	with resection of cervical rib	12.0	60	5.0
21720	Division of sternocleidomastoid for torticollis, open operation; without cast application	8.0	60	3.0
	(For transection of spinal accessory and cervical nerves, see 63191, 63192, 64722)			
21725	with cast application	9.0	60	3.0
21740	Reconstructive repair of pectus excavatum or carinatum	26.0	120	11.0
21741	Xiphoid resection pectus excavatum	BR		11.0
	FRACTURE AND/OR DISLOCATION			
21800	Treatment of rib fracture; closed, uncomplicated, each	Sv.&		
21805	open or complicated, each	BR		5.0
21810	closed or open requiring external fixation ("flail chest")	BR		5.0
21820	Treatment of sternum fracture; closed	Sv.&		
21825	open	BR+		5.0
	(For sternoclavicular dislocation, see 23520–23532)			
	MISCELLANEOUS			
21899	Unlisted procedure, neck or thorax	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-051, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-051, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-051, filed 1/30/74.]

WAC 296-22-053 Spine (vertebral column).

		Unit Value	Follow-up Days=	Basic Anes@
	(Cervical, thoracic (dorsal), and lumbar spine)			
	(For injection procedure for myelography, see 63510–63520)			
	(For injection procedure for discography, see 63530–63535)			
	EXCISION			
22010	Biopsy, spinal soft tissues; superficial	1.2	7	3.0
22011	deep	2.4	15	3.0
22012*	Biopsy, spinal soft tissues, percutaneous needle	BR		3.0
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
22030	Excision, benign tumor, subcutaneous	3.0	15	3.0
22031	Excision, benign tumor, deep, subfascial, intramuscular; cervical	4.0	15	3.0
22032	thoracic	3.0	15	3.0
22033	lumbar	3.0	15	3.0
	(For discectomy without arthrodesis (excision of intervertebral disc), see 63020–63076)			
	(For laminectomy, Gill procedure, see 63010)			
22100	Partial resection of vertebral component, spinous processes (e.g., "kissing" spines); cervical	8.0	90	8.0
22101	thoracic	8.0	90	7.0
22102	lumbar	8.0	90	7.0
22105	Partial resection of vertebral component for tumor (e.g., partial facetectomy without primary grafting); cervical	12.0	90	8.0
22106	thoracic	12.0	90	7.0
22107	lumbar	12.0	90	7.0
22110	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, cervical;	BR		8.0
22111	with suction irrigation	BR		8.0
22112	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, thoracic;	BR		7.0
22113	with suction irrigation	BR		7.0
22114	Partial excision of vertebrae (craterization, saucerization) for osteomyelitis, lumbar;	BR		7.0
22115	with suction irrigation	BR		7.0
22120	Radical resection of vertebral body or component with primary grafting, includes obtaining graft; cervical	BR		8.0
22121	thoracic	BR		7.0
22122	lumbar	BR		7.0
22128	Radical resection of vertebral body or component with prosthetic replacement, including fabrication of prosthesis; cervical	BR		7.0
22129	thoracic	BR		7.0
22130	lumbar	BR		7.0
	(For repair of pseudarthrosis, see 22600–22735)			
	INTRODUCTION			
	(For injection procedure for myelography, see 62284)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For injection procedure for diskography, see 62290, 62291)			
	(For injection procedure, chemonucleolysis, single or multiple levels, see 62292–62293)			
	REPAIR, REVISION, RECONSTRUCTION			
22200	Osteotomy of spine for correction fixed deformity (not scoliosis); anterior OR posterior, lumbar ..	32.0	180	7.0
22201	thoracic or cervical	40.0	180	7.0
22202	Osteotomy of spine for correction fixed deformity (not scoliosis); anterior AND posterior, lumbar.	40.0	180	7.0
22203	cervical	46.0	180	7.0
22206	Osteotomy of spine for correction fixed deformity, single or multiple (including vertebral body resection), for scoliosis with or without internal fixation; transthoracic	32.0	180	7.0
22207	transabdominal or retroperitoneal	40.0	180	7.0
	(For primary arthrodesis without osteotomy in scoliosis, see 22800–22840)			
	FRACTURE AND/OR DISLOCATION			
22305	Treatment of vertebral process fracture, each.....	Sv.&		
22310	Treatment of vertebral body fracture and/or dislocation; without reduction; each.....	Sv.&		
22315	with or without anesthesia by manipulation or traction, each	7.0	180	3.0
22325	Open treatment of vertebral body fracture and/or dislocation; lumbar, each.....	24.0	180	7.0
22326	cervical, each	24.0	180	8.0
22327	thoracic, each.....	24.0	180	7.0
	Procedural codes 22330–22371 are for a SINGLE level procedure; for additional levels, see 22730–22735			
22330	Open treatment and fusion, cervical spine, posterior approach, with local bone graft and/or internal fixation for fracture	28.0	180	8.0
22335	posterior approach, with iliac or other autogenous bone graft (includes obtaining graft), for fracture.....	31.0	180	8.0
22345	anterior approach, with iliac or other autogenous bone graft (includes obtaining graft) for fracture	30.0	180	7.0
	(For cervicocranial fusion, see 22620)			
22355	Open treatment and fusion, posterior approach, with local bone graft and/or internal fixation for fracture; lumbar.....	26.0	180	7.0
22356	thoracic	26.0	180	7.0
22360	Open treatment and fusion, posterior approach, with iliac or other autogenous bone graft (includes obtaining graft), for fracture; lumbar	30.0	180	7.0
22361	thoracic	30.0	180	7.0
22370	Open treatment and fusion, posterolateral or anterolateral approach, with iliac or other autogenous bone graft (includes obtaining graft) for fracture, lumbar	BR		7.0
22371	thoracic	BR		7.0
22379	Harrington rod technique (list separately in addition to code for treatment of closed or open fracture and/or dislocation)	BR		7.0
	MANIPULATION			
	(22500 Manipulation of spine not requiring anesthesia has been deleted. To report, use 97260)			
*22505	requiring anesthesia.....	*1.4	0	3.0
	ARTHRODESIS WITH DISKECTOMY (Intervertebral disk excision, laminotomy or laminectomy and fusion)			
	Procedural codes 22550–22565 are for SINGLE level procedure; for additional levels, see 22730–22735.			
	(For diskectomy without arthrodesis, see 63020–63076)			
22550	Arthrodesis with diskectomy, cervical, posterior approach; local bone graft and/or internal fixation.....	28.0	180	8.0
22552	with iliac or other autogenous bone graft (includes obtaining graft)	32.0	180	8.0
22555	Arthrodesis with diskectomy, cervical, anterior interbody approach, with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	7.0
	FOR THORACIC OR LUMBAR ARTHRODESIS WITH DISKECTOMY AND FUSION SEE CODES 22562 AND 22563			
22560	Arthrodesis with diskectomy, lumbar or thoracic, posterior posterolateral or posterior interbody approach; local bone graft and/or internal fixation...	NONCOVERED PROCEDURE		
22561	with iliac or other autogenous bone graft (includes obtaining graft)	NONCOVERED PROCEDURE		
22562	Arthrodesis with diskectomy, lumbar or thoracic, posterior or posterolateral, with local bone graft and/or internal fixation...	26.0	180	7.0
22563	Arthrodesis with diskectomy, lumbar or thoracic, posterior or posterolateral, with iliac or other autogenous graft (includes obtaining graft).....	30.0	180	7.0
22565	Arthrodesis with diskectomy, lower lumbar spine, anterior interbody approach, (includes obtaining graft)	24.0	180	7.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b and modifier -62.)			
	ARTHRODESIS, PRIMARY OR REPAIR OF PSEUDARTHROSIS			
	Procedural codes 22600-22720 are for SINGLE level procedures; for additional levels, see 22730-22735.			
22600	Cervical fusion, posterior approach below C-1 level; local bone graft and/or internal fixation	24.0	180	8.0
22605	with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	8.0
22615	Cervical fusion, anterior approach (C3-T1) with iliac or other autogenous bone graft (includes obtaining graft)	28.0	180	7.0
22617	Atlas-axis fusion (C1-C2 or C3) with iliac or other autogenous bone graft (includes obtaining graft) (posterior or anterior approach)	29.0	180	8.0
22620	Cervicocranial fusion (occiput through C2) with iliac or other autogenous bone graft) (includes obtaining graft)	30.0	180	8.0
22640	Thoracic or lumbar fusion, posterior or posterolateral approach; local bone graft and/or internal fixation	24.0	180	7.0
22645	with iliac or other autogenous bone graft (includes obtaining graft) (see also 22720)	28.0	180	7.0
22655	Thoracic or lumbar fusion; posterior interbody technique, with iliac or other autogenous bone graft, (includes obtaining graft) .		NONCOVERED PROCEDURE	
22670	lateral approach (transverse process to transverse process and/or sacrum) with iliac or other autogenous bone graft and/or internal fixation (includes obtaining graft)		NONCOVERED PROCEDURE	
22680	anterolateral or anterior interbody fusion, transthoracic approach (includes obtaining graft)	BR		11.0
22700	Lumbar spine fusion, anterior interbody fusion (includes obtaining graft)	24.0	180	7.0
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b and modifier -62.)			
22720	posterior approach, Harrington or Knodt rod distraction fusion, with iliac or other autogenous bone graft (includes obtaining graft)	30.0	180	7.0
22730	Arthrodesis, primary or repair of pseudarthrosis, two levels (list separately in addition to code for single level arthrodesis, 22600-22720)	6.0		7.0
22735	more than two levels (list separately in addition to code for single level arthrodesis, 22600-22720)	BR		7.0
	ARTHRODESIS, PRIMARY FOR SCOLIOSIS			
	(For single or multiple osteotomy type of scoliosis correction, see 22206, 22207)			
22800	Arthrodesis, primary for scoliosis (with or without postoperative cast), 6 or less vertebrae; local bone graft	29.0	180	7.0
22801	with iliac or other autogenous bone graft	30.0	180	7.0
22802	Arthrodesis, primary for scoliosis (with or without postoperative cast) seven or more vertebrae; local bone graft	BR		7.0
22803	with iliac or other autogenous bone graft	BR		7.0
22840	Posterior instrumentation; (e.g., Harrington rods technique) (list separately in addition to procedures 22800-22803)	50.0	180	7.0
22842	segmental wiring (e.g., Luque technique)	BR		7.0
	(List separately in addition to procedures 22800-22803)			
	(For somatosensory testing, see 95925)			
22845	Anterior instrumentation (e.g., Dwyer instrumentation) (list separately in addition to procedures 22800-22803)	BR		7.0
22850	Removal of posterior instrumentation (e.g., Harrington rod)	BR		7.0
22855	Removal of anterior instrumentation (e.g., Dwyer device)	BR		7.0
	(For presurgical braces, Milwaukee or other, casts of any type, see section on application of casts or strapping)			
	(For spinal cord monitoring, use 95925)			
	MISCELLANEOUS			
22899	Unlisted procedure, spine	BR		7.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-053, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-053, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-053, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-053, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-053, filed 1/30/74.]

WAC 296-22-061 Abdomen.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
22900	Excision, abdominal wall tumor, subfascial (e.g., desmoid)	10.0	90	5.0
22910	Abdominal fascial transplants, bilateral (Lowman type procedure) (includes obtaining fascia)	20.0	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
MISCELLANEOUS				
22999	Unlisted procedure, abdomen, musculoskeletal system	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-061, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-061, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-061, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-061, filed 1/30/74.]

WAC 296-22-063 Shoulder.

		Unit Value	Follow-up Days=	Basic Anes@
	(Clavicle, scapula, humerus head and neck, sternoclavicular joint, acromioclavicular joint and shoulder joint)			
INCISION				
23000	Removal of subdeltoid (or intratendinous) calcareous deposits	6.0	60	3.0
	(For excision of subdeltoid bursa, see 23110)			
23020	Capsular contracture release (Sever type procedure) for Erb's palsy	11.0	60	3.0
	(For incision and drainage procedures, superficial, see 10000-10160)			
23030	Incision and drainage; deep abscess or hematoma	BR		3.0
23031	infected bursa	BR		3.0
23035	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	BR		3.0
23036	with suction irrigation	BR		3.0
23040	Arthrotomy with exploration, drainage, or removal of foreign body, glenohumeral joint	11.0	60	3.0
	(For incision and drainage procedures, superficial, see 10000-10160)			
23042	with suction irrigation	12.0	60	3.0
23044	Arthrotomy with exploration, drainage or removal of foreign body, acromioclavicular, sternoclavicular joint	10.0	60	3.0
EXCISION				
23065	Biopsy, soft tissues; superficial	1.2	7	3.0
23066	deep	2.4	15	3.0
23075	Excision, benign tumor; subcutaneous	3.0	7	3.0
23076	deep, subfascial or intramuscular	4.0	15	3.0
23100	Arthrotomy for biopsy, glenohumeral joint	11.0	60	3.0
23101	Arthrotomy for biopsy or for excision of torn cartilage, acromioclavicular, sternoclavicular joint	11.0	60	4.0
23105	Arthrotomy for synovectomy; glenohumeral joint	BR		3.0
23106	acromioclavicular, sternoclavicular joint	BR		3.0
23110	Excision, subacromial subdeltoid bursa excision	6.0	60	3.0
23120	Claviculectomy; partial	8.5	60	3.0
23125	total	16.0	60	3.0
23130	Acromiectomy, partial or total	8.5	60	3.0
23140	Excision or curettage of bone cyst or benign tumor of clavicle or scapula;	6.0	60	3.0
23145	with primary autogenous graft (includes obtaining graft)	9.0	120	3.0
23146	with homogenous or other nonautogenous graft	11.0	120	3.0
23150	Excision or curettage of bone cyst or benign tumor of proximal humerus;	6.0	120	3.0
23155	with primary autogenous graft (includes obtaining graft)	9.0	120	3.0
23156	with homogenous or other nonautogenous graft	11.0	120	3.0
23170	Sequestrectomy for osteomyelitis or bone abscess, clavicle;	BR		3.0
23171	with suction irrigation	BR		3.0
23172	Sequestrectomy for osteomyelitis or bone abscess, scapula;	BR		3.0
23173	with suction irrigation	BR		3.0
23174	Sequestrectomy for osteomyelitis or bone abscess, humeral head to surgical neck;	BR		3.0
23175	with suction irrigation	BR		3.0
23180	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, clavicle	5.0	60	3.0
23181	with suction irrigation	5.0	60	4.0
23182	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, scapula;	6.0	60	4.0
23183	with suction irrigation	5.0	60	4.0
23184	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, proximal humerus;	6.0	60	4.0
23185	with suction irrigation	5.0	60	4.0
23190	Ostectomy of scapula, partial (e.g., superior medial angle)	7.0	60	3.0
23195	Resection humeral head	BR		3.0
	(For replacement with implant, see 23470)			
23200	Radical resection for tumor; clavicle	BR		3.0
23210	scapula	BR		3.0
23220	Radical resection for tumor, proximal humerus;	BR		3.0
23221	with autogenous bone graft, (includes obtaining graft)	BR		3.0
23222	with prosthetic replacement	BR		3.0
INTRODUCTION OR REMOVAL				
	(For arthrocentesis or needling of bursa, see 20610)			
	(For K wire or pin insertion or removal, see 20650, 20670, 20680)			
23330	Removal of foreign body; subcutaneous	8.0	60	3.0
23331	deep (e.g., prosthetic removal)	11.0	60	3.0
23332	complicated, including "total shoulder"	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
23350	Injection procedure for shoulder arthrography	0.6	0	3.0
	(For shoulder arthrography, see 73040)			
23355	Arthroscopy, shoulder diagnostic (separate procedure)	7.0		3.0
23356	Arthroscopy, shoulder, surgical; debridement with cartilage shaving and/or drilling and/or resection of reactive synovium	9.9	60	3.0
23357	with synovial biopsy	7.5	60	3.0
23358	with removal of loose body	7.5	60	3.0
	(When shoulder arthroscopy is performed in conjunction with arthrotomy, see modifier -51)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For sternoclavicular reconstruction, see 23530)			
	(For acromioclavicular joint reconstruction, see 23550)			
23395	Muscle transfer, any type for paralysis of shoulder or upper arm; single	20.0	90	4.0
23397	multiple	BR		
23400	Scapulopexy (e.g., Sprengel's deformity or for paralysis)	22.0	90	3.0
23405	Tenomyotomy; single	7.0	60	4.0
23406	multiple through same incision	13.0	60	4.0
23410	Repair of ruptured supraspinatus tendon or musculotendinous cuff; acute	14.0	120	3.0
23412	chronic	16.0	120	4.0
23415	Coracoacromial ligament release for chronic ruptured supraspinatus tendon	6.5		3.0
23420	Repair of complete shoulder cuff avulsion, chronic (includes acromionectomy)	18.0	120	3.0
23430	Tenodesis for rupture of long tendon of biceps	12.0	90	3.0
23440	Resection or transplantation of long tendon of biceps, for chronic tenosynovitis	12.0	90	3.0
23450	Capsulorrhaphy for recurrent dislocation, anterior; Putti-Platt procedure or Magnuson type operation	17.0	90	3.0
23455	Bankhart type operation	19.0	90	3.0
23460	Capsulorrhaphy for recurrent dislocation, anterior, any type; with bone block	20.0	120	3.0
23462	with coracoid process transfer	18.0	120	3.0
23465	Capsulorrhaphy for recurrent dislocation, posterior, with or without bone graft	17.0	90	3.0
	(For sternoclavicular and acromioclavicular reconstruction, see 23530 or 23550)			
23470	Arthroplasty with proximal humeral implant (e.g., Neer type operation)	20.0	120	3.0
23472	Arthroplasty with glenoid and proximal humeral replacement (e.g., total shoulder)	BR		3.0
	(For removal of total shoulder implants, see 23331, 23332)			
	(For osteotomy proximal humerus, see 24400)			
23480	Osteotomy, clavicle, with or without internal fixation;	10.0	90	3.0
23485	with bone graft for nonunion or malunion (includes obtaining graft and/or necessary fixation)	13.0	120	3.0
	FRACTURE AND/OR DISLOCATION			
23500	Treatment of closed clavicular fracture; without manipulation	Sv.&		
23505	with manipulation	3.0	90	3.0
23510	Treatment of open clavicular fracture, with uncomplicated soft tissue closure	5.0	90	3.0
23515	Open treatment of closed or open clavicular fracture, with or without internal or external skeletal fixation	9.0	90	3.0
23520	Treatment of closed sternoclavicular dislocation; without manipulation	Sv.&		
23525	with manipulation	2.8	90	3.0
23530	Open treatment of closed or open Sternoclavicular dislocation, acute or chronic;	10.0	90	5.0
23532	with fascial graft (includes obtaining graft)	12.0	90	5.0
23540	Treatment of closed acromioclavicular dislocation, without manipulation	Sv.&		
23545	with manipulation	2.4	45	3.0
23550	Open treatment of closed or open acromioclavicular dislocation, acute or chronic;	12.0	90	3.0
23552	with fascial graft (includes obtaining graft)	15.0	90	3.0
23570	Treatment of closed scapular fracture; without manipulation	Sv.&		
23575	with manipulation (with or without shoulder joint involvement)	2.8	90	3.0
23580	Treatment of open scapular fracture, with uncomplicated soft tissue closure	5.0	90	3.0
23585	Open treatment of closed or open scapular fracture juxtaarticular	12.0	90	3.0
23600	Treatment of closed humeral (surgical or anatomical neck) fracture; without manipulation	Sv.&		
23605	with manipulation	5.0	90	3.0
23610	Treatment of open humeral (surgical or anatomical neck) fracture, with uncomplicated soft tissue closure	7.0	90	3.0
23615	Open treatment of closed or open humeral (surgical or anatomical neck) fracture, with or without internal or external skeletal fixation	12.0	90	3.0
23620	Treatment of closed greater tuberosity fracture; without manipulation	Sv.&		
23625	with manipulation	3.5	90	3.0
23630	Open treatment of closed or open greater tuberosity fracture, with or without internal or external skeletal fixation	9.0	90	3.0
23650	Treatment of closed shoulder dislocation, with manipulation;			

		Unit Value	Follow-up Days=	Basic Anes@
	without anesthesia	Sv.&		
*23655	requiring anesthesia	*1.2	0	3.0
23658	Treatment of open shoulder dislocation, with uncomplicated soft tissue closure	BR		3.0
23660	Open treatment of closed or open shoulder dislocation	12.0	90	3.0
23665	Treatment of closed shoulder dislocation, with fracture of greater tuberosity, with manipulation	3.0	90	3.0
23670	Open treatment of closed or open shoulder dislocation, with fracture of greater tuberosity	12.0	90	3.0
23675	Treatment of closed shoulder dislocation, with surgical or anatomical neck fracture, with manipulation	4.0	90	3.0
23680	Open treatment of closed or open shoulder dislocation, with surgical or anatomical neck fracture	14.0	90	3.0
	MANIPULATION			
*23700	Manipulation under anesthesia, including application of fixation apparatus (dislocation excluded)	*1.2	0	3.0
	ARTHRODESIS			
23800	Arthrodesis, shoulder joint, with or without local bone graft	20.0	120	3.0
23802	with primary autogenous graft (includes obtaining graft)	24.0	120	3.0
	AMPUTATION			
23900	Interthoracoscapular amputation (forequarter)	24.0	90	11.0
23920	Disarticulation of shoulder	18.0	90	5.0
23921	secondary closure or scar revision	5.0	30	3.0
	MISCELLANEOUS			
23929	Unlisted procedure, shoulder	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-063, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-063, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-063, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-063, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-063, filed 1/30/74.]

WAC 296-22-067 Humerus (upper arm) and elbow.

		Unit Value	Follow-up Days=	Basic Anes@
	(Elbow area includes head and neck of radius and olecranon process.)			
	INCISION			
	(For incision and drainage procedures, superficial, see 10000-10160)			
23930	Incision and drainage; deep abscess or hematoma	5.0	15	3.0
23931	infected bursa	5.0	15	3.0
23935	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	8.0	15	3.0
23936	with suction irrigation	8.0	15	3.0
24000	Arthrotomy, elbow, with exploration, drainage, or removal of foreign body;	10.0	60	3.0
24001	with suction irrigation	8.0	15	3.0
	EXCISION			
	(For muscle or bone biopsy, see 20200-20245)			
24065	Biopsy, soft tissues; superficial	2.0	7	3.0
24066	deep	3.0	15	3.0
24075	Excision, benign tumor; subcutaneous	4.0	15	3.0
24076	deep, subfascial or intramuscular	4.5	15	3.0
24100	Arthrotomy, elbow, for synovial biopsy only	10.0	60	3.0
24101	with joint exploration, with or without biopsy, with or without removal of foreign body	12.0	60	3.0
24102	for synovectomy	14.0	90	3.0
24105	Excision, olecranon bursa	4.8	60	3.0
24110	Excision or curettage of bone cyst or benign tumor, humerus;	9.5	60	3.0
24115	with primary autogenous graft (includes obtaining graft)	12.5	120	3.0
24116	with homogenous or other nonautogenous graft	13.0	120	3.0
24120	Excision or curettage of bone cyst or bone tumor of head or neck of radius or olecranon process	8.0	60	3.0
24125	with primary autogenous graft (includes obtaining graft)	10.0	120	3.0
24126	with homogenous or other nonautogenous graft	11.0	120	3.0
24130	Excision, radial head	8.0	60	3.0
	(For replacement with implant, see 24366)			
24134	Sequestrectomy for osteomyelitis or bone abscess, shaft or distal humerus;	BR		3.0
24135	with suction irrigation	BR		3.0
24136	Sequestrectomy for osteomyelitis or bone abscess, radial head or neck;	BR		3.0
24137	with suction irrigation	BR		3.0
24138	Sequestrectomy for osteomyelitis or bone abscess, olecranon process;	BR		3.0
24139	with suction irrigation	BR		3.0
24140	Partial excision of bone (craterization, saucerization or diaphysectomy), for osteomyelitis, humerus,	7.0	60	3.0
24144	with suction irrigation	8.0	60	3.0
24145	Partial excision of bone (craterization, saucerization or diaphysectomy,) for osteomyelitis, radial head or neck;	7.0	6.0	3.0
24146	with suction irrigation	8.0	6.0	3.0
24147	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, olecranon process;	7.0	60	3.0
24148	with suction irrigation	8.0	60	3.0
24150	Radical resection for tumor, shaft or distal humerus;	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
24151	with autogenous bone graft (includes obtaining graft)	BR		3.0
24152	Radical resection for tumor, radial head or neck;	BR		3.0
24153	with autogenous bone graft (includes obtaining graft)	BR		3.0
24155	Resection of elbow joint (arthrectomy)	BR		3.0
	INTRODUCTION OR REMOVAL			
	(For K wire or pin insertion or removal, see 20650, 20670, 20680)			
	(For arthrocentesis or needling of bursa or joint, see 20605)			
24160	Implant removal; elbow joint	6.0	60	3.0
24164	radial head	4.8	60	3.0
24200	Removal of foreign body; subcutaneous	BR		3.0
24201	deep	BR		3.0
24220	Injection procedure for elbow arthrography	BR		3.0
	(For elbow arthrography, see 73085)			
	(For injection of tennis elbow, see 20550)			
	REPAIR, REVISION, AND RECONSTRUCTION			
	(For neurorrhaphy or neuroplasty, arm, see 64702 et seq.)			
	(For repair of deep wound, see 20800)			
24301	Muscle or tendon transfer, any type, single (excluding 24330)	BR		3.0
24305	Tendon lengthening; single, each	7.0		3.0
24310	Tenotomy, open, elbow to shoulder, single, each	5.0	30	3.0
24320	Tenoplasty, with muscle transfer, with or without free graft, elbow to shoulder, single (Seddon–Brookes type procedure)	BR		3.0
24330	Flexor–plasty, elbow (e.g., Steindler type advancement);	8.0	90	3.0
24331	with extensor advancement	8.0	90	3.0
24340	Tenodesis for rupture of biceps tendon at elbow	14.0	90	3.0
24342	Reinsertion of ruptured biceps tendon, distal, with or without tendon graft (includes obtaining graft)	14.0	90	3.0
24350	Fasciotomy, lateral or medial (e.g., "tennis elbow" or epicondylitis);	6.0	30	3.0
24351	with extensor origin detachment	5.0	30	3.0
24352	with annular ligament resection	6.0	30	3.0
24354	with stripping	7.0		3.0
24356	with partial ostectomy	BR		3.0
24360	Arthroplasty, elbow, with membrane	BR		3.0
24361	with distal humeral prosthetic replacement	BR		3.0
24362	with implant and fascia lata ligament reconstruction	BR		3.0
24363	with distal humerus and proximal ulnar prosthetic replacement ("total elbow")	BR		3.0
24365	Arthroplasty, radial head;	10.0	120	3.0
24366	with implant	BR		3.0
24400	Osteotomy, humerus, with or without internal fixation	12.0	90	3.0
24410	Multiple osteotomies with realignment on intramedullary rod (Sofield type procedure)	14.0	90	3.0
24420	Osteoplasty, humerus (e.g., shortening or lengthening)	BR		3.0
24430	Repair of nonunion or malunion, humerus; without graft (e.g., compression technique, etc.)	17.0	90	3.0
24435	with iliac or other autogenous bone graft (includes obtaining graft)	20.0	120	3.0
	(For proximal radius and/or ulna, see 25400–25420)			
24470	Hemiepiphyseal arrest (e.g., for cubitus varus or valgus, distal humerus)	7.0	120	3.0
24495	Decompression fasciotomy, forearm, with brachial artery exploration	BR		3.0
	FRACTURE AND/OR DISLOCATION			
24500	Treatment of closed humeral shaft fracture; without manipulation	Sv.&		
24505	with manipulation	5.0	90	3.0
24510	Treatment of open humeral shaft fracture, with uncomplicated soft tissue closure	7.0	90	3.0
24515	Open treatment of closed or open humeral shaft fracture, with or without internal or external skeletal fixation	11.0	90	3.0
24530	Treatment of closed supracondylar or transcondylar fracture, without manipulation	Sv.&		
24531	with traction (pin or skin)	BR		3.0
24535	Treatment of closed supracondylar or transcondylar fracture, with manipulation	5.0	90	3.0
24536	with traction (pin or skin)	9.0	90	3.0
24538	with percutaneous skeletal fixation	10.0	90	3.0
24540	Treatment of open supracondylar or transcondylar fracture, with uncomplicated soft tissue closure;	7.0	90	3.0
24542	with traction (pin or skin)	11.0	90	3.0
24545	Open treatment of closed or open supracondylar or transcondylar fracture, with or without internal or external skeletal fixation	10.0	90	3.0
24560	Treatment of closed epicondylar fracture, medial or lateral; without manipulation	Sv.&		
24565	with manipulation	4.0	90	3.0
24570	Treatment of open epicondylar fracture, medial or lateral with uncomplicated soft tissue closure	6.0	90	3.0
24575	Open treatment of closed or open epicondyler fracture, medial or lateral, with or without internal or external skeletal fixation	9.0	90	3.0
24576	Treatment of closed condylar fracture, medial or lateral; without manipulation	SV		
24577	with manipulation	4.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
24578	Treatment of open condylar fracture, medial or lateral, with uncomplicated soft tissue closure ..	5.0	90	3.0
24579	Open treatment of closed or open condylar fracture, medial or lateral, with or without internal or external skeletal fixation	7.0	90	3.0
24580	Treatment of closed comminuted elbow fracture (fracture distal humerus and/or proximal ulna and/or proximal radius), treatment with traction, (pin or skin); without manipulation	SV		
24581	with manipulation	8.0	90	3.0
24583	Treatment of open comminuted elbow fracture (fracture distal humerus and/or proximal ulna and/or proximal radius), with uncomplicated soft tissue closure	9.0	90	3.0
24585	Open treatment of closed or open comminuted elbow fracture (fracture distal humerus and/or proximal ulna/radius), with or without internal or external skeletal fixation;	12.0	90	3.0
24586	with elbow resection	BR		3.0
24587	with implant	BR		3.0
	(See also 24361)			
24588	with implants and fascia lata ligament reconstruction	BR		3.0
	(See also 24362)			
24600	Treatment of closed elbow dislocation; without anesthesia	Sv.&		
*24605	requiring anesthesia	*1.0	0	3.0
24610	Treatment of open elbow dislocation, with uncomplicated soft tissue closure	6.0	45	3.0
24615	Open treatment of closed or open elbow dislocation	12.0	90	3.0
24620	Treatment of closed Monteggia type of fracture dislocation at elbow (fracture proximal end of ulna with dislocation of radial head)	4.0	90	3.0
24625	Treatment of closed Monteggia type fracture dislocation at elbow (fracture proximal end of ulna with dislocation of the radial head), with uncomplicated soft tissue closure	6.0	90	3.0
24635	Open treatment of closed or open Monteggia type fracture dislocation at elbow (fracture proximal end of ulna with dislocation of radial head), with or without internal or external skeletal fixation	12.0	90	3.0
*24640	Treatment of radial head subluxation in child, "nursemaid elbow," with manipulation	Sv.&		
24650	Treatment of closed radial head or neck fracture; without manipulation	Sv.&		
24655	with manipulation	3.0	90	3.0
24660	Treatment of open radial head or neck fracture, with uncomplicated soft tissue closure	4.0	90	3.0
24665	Open treatment of closed or open radial head or neck fracture, with or without internal fixation or radial head excision	8.0	90	3.0
24666	with implant	9.0	90	3.0
24670	Treatment of closed ulnar fracture, proximal end (olecranon process); without manipulation ..	Sv.&		
24675	with manipulation	3.0	90	3.0
24680	Treatment of open ulnar fracture, proximal end (olecranon process), with uncomplicated soft tissue closure	4.0	90	3.0
24685	Open treatment of closed or open ulnar fracture proximal end (olecranon process), with or without internal or external skeletal fixation	8.0	90	3.0
	MANIPULATION			
*24700	Manipulation under general anesthesia (includes application of traction or other fixation device)	*1.0	0	3.0
	ARTHRODESIS			
24800	Arthrodesis, elbow joint; with or without local or homogenous bone graft	16.0	120	3.0
24802	with primary autogenous bone graft (includes obtaining graft)	16.0	120	3.0
	AMPUTATION			
24900	Amputation, arm through humerus; with primary closure	10.0	90	3.0
24920	open, circular (guillotine)	9.0	90	3.0
24925	secondary closure or scar revision	3.0	30	3.0
24930	reamputation	10.0	90	3.0
24931	with implant	10.0	90	3.0
24935	Stump elongation	3.0	90	3.0
24940	Cineplasty, upper extremity, complete procedure	BR		3.0
	MISCELLANEOUS			
24999	Unlisted procedure, humerus or elbow	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-067, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-067, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-067, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-067, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-067, filed 1/30/74.]

WAC 296-22-071 Forearm and wrist.

		Unit Value	Follow-up Days=	Basic Anes@
	(Radius, ulna, carpal bones and joints)			
	INCISION			
25000	Tendon sheath incision; at radial styloid for De Quervain's disease	4.4	30	3.0
25005	at wrist for other stenosing tenosynovitis	4.0	30	3.0
	(For decompression median nerve or for carpal tunnel syndrome, see 64721)			

		Unit Value	Follow-up Days=	Basic Anes@
25020	Decompression fasciotomy, flexor and/or extensor compartment; ..	3.5	30	3.0
25023	with debridement of nonviable muscle and/or nerve	4.0	30	3.0
	(For decompression fasciotomy with brachial artery exploration, see 24495)			
	(For incision and drainage procedures, superficial, see 10000-10160)			
25028	Incision and drainage; deep abscess or hematoma	1.0	30	3.0
25031	infected bursa	1.5	30	3.0
25035	Incision, deep, with opening of cortex for osteomyelitis or bone abscess;	2.0	30	3.0
25036	with suction irrigation	2.5	30	3.0
25040	Arthrotomy with exploration, drainage, or removal of loose or foreign body, infection, radiocarpal or mediocarpal joint;	5.0	60	3.0
25041	with suction irrigation	5.5	60	3.0
EXCISION				
25065	Biopsy, soft tissues; superficial ..	2.0	7	3.0
25066	deep	3.0	15	3.0
25075	Excision, benign tumor; subcutaneous	4.0	15	3.0
25076	deep, subfascial or intramuscular	4.0	15	3.0
25085	Capsulotomy, wrist (e.g., for contracture)	4.0	15	3.0
25100	Arthrotomy, wrist joint, for biopsy	5.0	60	3.0
25101	with joint exploration, with or without biopsy, with or without removal of foreign body ..	7.0	60	3.0
25105	for synovectomy	8.0	90	3.0
25107	Arthrotomy, distal radioulnar joint for excision triangular cartilage	9.0	60	3.0
25110	Excision, lesion of tendon sheath	3.0	30	3.0
25111	Excision of ganglion, wrist (dorsal or volar); primary	5.0	30	3.0
25112	recurrent	4.0	30	3.0
	(For hand or finger, see 26160)			
25115	Radical excision of bursa synovia of wrist, or forearm tendon sheaths (e.g., tenosynovitis, fungus, Tbc., or other granulomas, rheumatoid arthritis); flexors ...	10.0	60	3.0
25116	extensors (with or without transposition of dorsal retinaculum)	10.0	60	3.0
	(For finger synovectomies, see 26145)			
25118	Synovectomy, extensor tendon sheaths, wrist, single compartment;	10.0	60	3.0
25119	with resection of distal ulna ..	11.0	60	3.0
25120	Excision or curettage of bone cyst or benign tumor of radius or ulna (excluding head or neck of radius and olecranon process); ..	7.0	60	3.0
	(For head or neck of radius or olecranon process, see 24120, 24126)			
25125	with primary autogenous graft (includes obtaining graft)	10.0	120	3.0
25126	with homogenous or other nonautogenous graft	10.0	120	3.0
25130	Excision or curettage of bone cyst or benign tumor of carpal bones	5.0	60	3.0
25135	with primary autogenous graft (includes obtaining graft)	7.0	120	3.0
25136	with homogenous or other nonautogenous graft	7.0	120	3.0
25145	Sequestrectomy for osteomyelitis or bone abscess;	BR		3.0
25146	with suction irrigation	BR		3.0
25150	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, ulna	5.0	60	3.0
25151	radius	5.0	60	3.0
25153	radius or ulna, with suction irrigation	5.5	60	3.0
	(For head or neck of radius or olecranon process, see 24145, 24148)			
25170	Radical resection for tumor, radius or ulna	BR		3.0
25210	Carpectomy, one bone	7.0	60	3.0
	(For carpectomy with implant, see 25441-25445)			
25215	all bones or proximal row	10.0	60	3.0
25230	Radial styloidectomy (separate procedure)	5.0	60	3.0
25240	Excision distal ulna (Darrach type procedure)	6.0	60	3.0
	(For implant replacement, distal ulna, see 25442)			
	(For obtaining fascia for interposition, see 20920, 20922)			
INTRODUCTION OR REMOVAL				
	(For K wire, pin, or rod insertion or removal, see 20650, 20670, 20680)			
25246	Injection procedure for wrist arthrography	BR		
	(For wrist arthrography, see 73115)			
	(For foreign body removal, superficial see 20520)			
25248	Exploration for removal of deep foreign body	BR		
25250	Removal of wrist prosthesis; (separate procedure)	BR		3.0
25251	complicated, including "total wrist"	BR		3.0
REPAIR, REVISION OR RECONSTRUCTION				
	(For repair of deep wounds, see 20800)			
	(For neurorrhaphy or neuroplasty, see 64700 et seq.)			
	(For tenotomy or tenoplasty, see 24310, 24320)			

		Unit Value	Follow-up Days=	Basic Anes@
25260	Repair, tendon or muscle, flexor; primary, single, each tendon or muscle	7.0	90	3.0
25263	secondary, single, each tendon or muscle	1.5	90	3.0
25265	secondary, with free graft (includes obtaining graft), each tendon or muscle	3.0	90	3.0
25270	Repair, tendon or muscle, extensor; primary, single, each tendon or muscle	5.0	90	3.0
25272	secondary, single, each tendon or muscle	1.5	90	3.0
25274	Repair, tendon or muscle, extensor, secondary, with tendon graft (includes obtaining graft), each tendon	8.0	90	3.0
25280	Lengthening or shortening of flexor or extensor tendon, single, each tendon	7.0	90	3.0
25290	Tenotomy, open, single, flexor or extensor tendon, each tendon	4.0	90	3.0
25295	Tenolysis, single flexor or extensor tendon, each tendon	1.0	90	3.0
25300	Tenodesis, wrist; flexors of fingers	8.0	90	3.0
25301	extensors of fingers	6.0	90	3.0
25310	Tendon transplantation or transfer, flexor or extensor, single, each tendon	9.5	90	3.0
25312	with tendon graft(s) (includes obtaining graft), each tendon	8.0	90	3.0
25315	Flexor origin slide for cerebral palsy;	8.0	90	3.0
25316	with tendon(s) transfer	9.0	90	3.0
25317	Flexor origin slide for Volkmann contracture;	12.0	120	3.0
25318	with tendon(s) transfer	13.0	120	3.0
25320	Capsulorrhaphy or reconstruction, capsulectomy, wrist (includes synovectomy, resection of capsule, tendon insertions)	21.1	120	3.0
25330	Arthroplasty, wrist	8.0	120	3.0
25331	with implant	BR		3.0
25332	pseudarthrosis type with internal fixation	BR		3.0
	(For obtaining fascia for interposition, see 20920–20922)			
25335	Transposition and realignment of hand over ulna with or without removal of bone or bones, and with or without tendon transfer or advancement (Riordon type operation)	BR		
25350	Osteotomy, radius, distal third	10.0	90	3.0
25355	middle or proximal third	12.0	90	3.0
25360	Osteotomy, ulna	10.0	90	3.0
25365	radius and ulna	14.0	90	3.0
25370	Multiple osteotomies, with realignment on intramedullary rod (Sofield type procedure), radius OR ulna	12.0	90	3.0
25375	radius AND ulna	18.0	90	3.0
25390	Osteoplasty, radius OR ulna; shortening	BR+		3.0
25391	lengthening with autogenous bone graft	BR		3.0
25392	Osteoplasty, radius AND ulna; shortening	BR		3.0
25393	lengthening with autogenous bone graft	BR		3.0
25400	Repair of nonunion or malunion, radius OR ulna; without graft (e.g., compression technique, etc.)	14.0	90	3.0
25405	with iliac or other autogenous bone graft (includes obtaining graft)	17.0	120	3.0
25415	Repair of nonunion or malunion, radius AND ulna; without graft (e.g., compression technique, etc.)	20.0	90	3.0
25420	with iliac or other autogenous bone graft (includes obtaining graft)	23.0	120	3.0
25425	Repair of defect with autogenous bone graft; radius OR ulna	14.0	120	3.0
25426	radius AND ulna	20.0	120	3.0
25440	Repair of nonunion, scaphoid (navicular) bone, with or without radial styloidectomy (includes obtaining graft and necessary fixation)	14.0	120	3.0
25441	Arthroplasty with prosthetic replacement; distal radius	18.0	120	3.0
25442	distal ulna	12.5	120	3.0
25443	scaphoid (navicular)	15.5	120	3.0
25444	lunate	15.5	120	3.0
25445	trapezium	15.5	120	3.0
25446	distal radius and partial or entire carpus ("total wrist")	20.0	120	3.0
25449	Arthroplasty with removal of implant	BR	120	3.0
25450	Epiphyseal arrest by epiphysiodesis or stapling; distal radius OR ulna	6.0	120	3.0
25455	distal radius AND ulna	8.0	120	3.0
	FRACTURE AND/OR DISLOCATION			
25500	Treatment of closed radial shaft fracture; without manipulation	Sv.&		
25505	with manipulation	4.2	90	3.0
25510	Treatment of open radial shaft fracture, with uncomplicated soft tissue closure	5.0	90	3.0
25515	Open treatment of closed or open radial shaft fracture, with or without internal or external skeletal fixation	8.0	90	3.0
25530	Treatment of closed ulnar shaft fracture; without manipulation	Sv.&		
25535	with manipulation	4.0	90	3.0
25540	Treatment of open ulnar shaft fracture with uncomplicated soft tissue closure	5.0	90	3.0
25545	Open treatment of closed or open ulnar shaft fracture, with or without internal or external skeletal fixation	8.0	90	3.0
25560	Treatment of closed radial and ulnar shaft fractures; without manipulation	Sv.&		
25565	with manipulation	5.4	90	3.0
25570	Treatment of open radial and ulnar shaft fractures, with uncomplicated soft tissue closure	6.0	90	3.0
25575	Open treatment of closed or open radial and ulnar shaft fractures, with or without internal or external skeletal fixation	12.0	90	3.0
25600	Treatment of closed distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of ulnar			

		Unit Value	Follow-up Days=	Basic Anes@
	styloid, without manipulation ...	Sv.&		
25605	with manipulation	4.0	90	3.0
25610	Treatment of closed, complex, distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of ulnar styloid, requiring manipulation; without external skeletal fixation or percutaneous pinning	6.0	90	3.0
25611	with external skeletal fixation or percutaneous pinning	8.0	120	3.0
25615	Treatment of open distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, without fracture of ulnar styloid, with uncomplicated soft tissue closure	5.0	90	3.0
25620	Open treatment of closed or open distal radial fracture (e.g., Colles or Smith type) or epiphyseal separation, with or without fracture of the ulnar styloid, with or without internal or external skeletal fixation	8.0	90	3.0
25622	Treatment of closed carpal scaphoid (navicular) fracture; without manipulation	SV		
25624	with manipulation	4.0	90	3.0
25626	Treatment of open carpal scaphoid (navicular) fracture, with uncomplicated soft tissue closure	5.0	90	3.0
25628	Open treatment of closed or open carpal scaphoid (navicular) fracture, with or without skeletal fixation	8.0	90	3.0
25630	Treatment of closed carpal bone fracture (excluding carpal scaphoid (navicular)); without manipulation, each bone	Sv.&		
25635	with manipulation, each bone	4.0	90	3.0
25640	Treatment of open carpal bone fracture (excluding carpal scaphoid (navicular)); without manipulation, each bone	5.0	90	3.0
25645	Open treatment of closed or open carpal bone fracture (excluding carpal scaphoid (navicular)), each bone	6.0	90	3.0
25650	Treatment of closed ulnar styloid fracture.....	BR		3.0
25660	Treatment of closed radiocarpal or intercarpal dislocation, one or more bones, with manipulation...	1.2	0	3.0
25665	Treatment of open radiocarpal dislocation or intercarpal, one or more bones, with uncomplicated soft tissue closure	4.0	45	3.0
25670	Open treatment of closed or open radiocarpal or intercarpal dislocation, one or more bones	8.0	90	3.0
25675	Treatment of closed distal radioulnar dislocation with manipulation.....	3.2	60	3.0
25676	Open treatment of closed or open distal radioulnar dislocation, acute or chronic.....	6.0	90	3.0
25680	Treatment of closed trans-scaphoperilunar type of fracture dislocation, with manipulation .	6.0	45	3.0
25685	Open treatment of closed or open trans-scaphoperilunar type of fracture dislocation	12.0	90	3.0
25690	Treatment of lunate dislocation, with manipulation	4.0	90	3.0
25695	Open treatment of lunate dislocation	8.0	90	3.0
	MANIPULATION			
*25700	Manipulation of wrist joint under general anesthesia	*1.0	0	3.0
	ARTHRODESIS			
25800	Arthrodesis, wrist joint, without bone graft.....	12.0	120	3.0
25805	with sliding graft	14.0	120	3.0
25810	with iliac or other autogenous bone graft (includes obtaining graft)	16.0	120	3.0
25815	Arthrodesis, intercarpal.....	BR		3.0
	AMPUTATION			
25900	Amputation, forearm, through radius and ulna	9.0	90	3.0
25905	open, circular (guillotine)	8.0	90	3.0
25907	secondary closure or scar revision	3.0	30	3.0
25909	reamputation	9.0	90	3.0
25915	Krukenberg procedure.....	9.0	90	3.0
25920	Disarticulation through wrist ...	8.0	90	3.0
25922	secondary closure or scar revision	3.0	90	3.0
25924	reamputation	9.0	90	3.0
25927	Transmetacarpal amputation; ...	10.0	90	3.0
25929	secondary closure or scar revision	3.0	90	3.0
25931	reamputation	10.0	90	3.0
	MISCELLANEOUS			
25999	Unlisted procedure, forearm or wrist	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-071, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-071, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-071, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-071, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-071, filed 1/30/74.]

WAC 296-22-073 Hand and fingers.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For drainage of paronychia, see 10100, 10101)			
*26010	Drainage of finger tip abscess; simple	*0.72	0	3.0
26011	complicated (e.g., felon, etc.) .	BR		3.0
26020	Drainage of tendon sheath, one digit and/or palm	4.0	30	3.0
	(For drainage of simple abscess, see 10020, 10060)			
26025	Drainage of palmar bursa; single, ulnar or radial	5.0	30	3.0
26030	multiple or complicated.....	BR		3.0
26032	with suction irrigation	5.0	30	3.0

		Unit Value	Follow-up Days=	Basic Anes@
26034	Incision, deep, with opening of cortex for osteomyelitis or bone abscess	4.0	30	3.0
26035	Decompression fingers and/or hand, injection injury (e.g., grease gun, etc.)	BR		
26040	Fasciotomy, palmar, for Dupuytren's contracture; closed (subcutaneous)	3.6	60	3.0
26045	open, partial	5.0	60	3.0
	(For fasciectomy, see 26120–26128)			
26055	Tendon sheath incision for trigger finger	5.0	30	3.0
*26060	Tenotomy, subcutaneous, single, each digit	*1.2	0	3.0
26070	Arthrotomy with exploration, drainage or removal of loose or foreign body; carpometacarpal joint	5.0	60	3.0
26075	metacarpophalangeal joint	5.0	60	3.0
26080	interphalangeal joint, each	4.0	60	3.0
EXCISION				
	(For finger nail, see 11700–11750)			
	(For biopsy, see 20200–20240)			
	(For neuroma, see 64200–64210)			
26100	Arthrotomy for synovial biopsy; carpometacarpal joint	5.0	60	3.0
26105	metacarpophalangeal joint	5.0	60	3.0
26110	interphalangeal joint, each	4.0	60	3.0
26115	Excision of benign tumor; subcutaneous	4.0	15	3.0
26116	deep, subfascial, intramuscular	4.0	30	3.0
26120	Fascietomy palmer, simple, for Dupuytren's contracture, partial excision	6.0	60	3.0
26122	up to 1/2 palmar fascia, with single digit involvement, with or without Z–plasty or other local tissue rearrangement	10.0	60	3.0
	(For fasciotomy, see 26040–26045)			
26124	Fasciectomy, palmar, complicated, requiring skin grafting (includes obtaining graft); with single digit involvement	14.0	90	3.0
26126	each additional digit	18.0	90	3.0
26128	each finger joint release	BR		
	(For skin grafts, etc., see 14000–15240)			
26130	Synovectomy, carpometacarpal joint	10.0	90	3.0
26135	Synovectomy, metocarpophalangeal joint including intrinsic release and extensor hood reconstruction, each digit	5.0	90	3.0
26140	Synovectomy, proximal interphalangeal joint, including extensor reconstruction, each interphalangeal joint	5.0	90	3.0
26145	Synovectomy, tendon sheath, radical (tenosynovectomy), flexor, palm or finger, single, each digit	10.0	90	3.0
	(For tendon sheath synovectomies at wrist, see 25115, 25116)			
26160	Excision of lesion of tendon sheath or capsule (e.g., cyst or ganglion)	2.4	30	3.0
	(For wrist ganglion, see 25111, 25112)			
	(For trigger digit, see 26055)			
26170	Excision of tendon, palm, flexor, single (independent procedure), each	BR		3.0
26180	Excision of tendon, finger, flexor (separate procedure)	BR		3.0
26200	Excision or curettage of bone cyst or benign tumor of metacarpal;	6.0	60	3.0
26205	with autogenous graft (includes obtaining graft)	7.0	120	3.0
26206	with homogenous or other nonautogenous graft	7.0	120	3.0
26210	Excision or curettage of bone cyst or benign tumor of proximal, middle or distal phalanx;	5.0	60	3.0
26215	with autogenous graft (includes obtaining graft)	6.0	120	3.0
26216	with homogenous or other nonautogenous graft	6.0	120	3.0
26230	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, metacarpal	6.0	60	3.0
26235	proximal or middle phalanx	5.0	60	3.0
26236	distal phalanx	5.0	60	3.0
26250	Radical resection (ostectomy) for tumor, metacarpal;	12.0	120	3.0
26255	with autogenous graft (includes obtaining graft)	12.0	120	3.0
26260	Radical resection (ostectomy) for tumor, proximal or middle phalanx	10.0	120	3.0
26261	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26262	Radical resection (ostectomy) for tumor, distal phalanx	BR		3.0
INTRODUCTION OR REMOVAL				
	(For arthrocentesis (injection or aspiration), see 20600)			
	(For K wire or pin insertion or removal, see 20650, 20670, 20680)			
26320	Removal of implant from finger or hand	BR		3.0
REPAIR, REVISION OR RECONSTRUCTION				
	(For neurorrhaphy, neuroplasty or neurolysis, see 64700 et seq.)			
26350	Flexor tendon repair or advancement, single, not in "no man's land"; primary or secondary without free graft, each tendon	7.0	120	3.0
26352	secondary with free graft (includes obtaining graft), each tendon	BR+		3.0
26356	Flexor tendon repair or advancement, single, in "no man's land"; primary, each tendon	7.0	120	3.0

		Unit Value	Follow-up Days=	Basic Anes@
26358	secondary with free graft (includes obtaining graft), each tendon	BR		3.0
26370	Profundus tendon repair or advancement, with intact sublimis; primary	11.8	120	3.0
26372	secondary with free graft (includes obtaining graft)	BR		3.0
26373	secondary without free graft	BR		3.0
26390	Flexor tendon excision, implantation of plastic tube or rod for delayed tendon graft	BR		3.0
26392	Removal of tube or rod and insertion of tendon graft (includes obtaining graft)	BR		3.0
26410	Extensor tendon repair, dorsum of hand, single, primary or secondary; without free graft, each tendon	3.0	120	3.0
26412	with free graft (includes obtaining graft); each tendon	BR		3.0
26418	Extensor tendon repair, dorsum of finger, single, primary or secondary; without free graft, each tendon	4.0	120	3.0
26420	with free graft (includes obtaining graft) each tendon	BR		3.0
26426	Extensor tendon repair, central slip repair, secondary (boutonniere deformity); using local tissues	4.0	120	3.0
26428	with free graft (includes obtaining graft)	BR		
26432	Extensor tendon repair, distal insertion ("mallet finger"), closed, splinting with or without percutaneous pinning	5.0	120	3.0
26433	Extensor tendon repair, open, primary or secondary repair; without graft	6.0	120	3.0
26434	with free graft (includes obtaining graft)	BR		3.0
	(For tenovaginotomy for trigger finger, see 26055)			
26437	Extensor tendon realignment (for arthritis)	BR		3.0
26440	Tenolysis, simple, flexor tendon, palm, OR finger, single, each tendon	5.0	60	3.0
26442	palm AND finger, each tendon	6.0	60	3.0
26445	Tenolysis, extensor tendon, dorsum of hand or finger; each tendon	6.0	60	3.0
26449	Tenolysis, complex, extensor tendon, dorsum of hand or finger, including hand and forearm	BR		3.0
	(For fascia or other implant, see 20920, 20922)			
26450	Tenotomy, flexor, single, palm, open each	4.0	30	3.0
26455	Tenotomy, flexor, single, finger, open, each	5.0	30	3.0
26460	Tenotomy, extensor, hand or finger, single, each	BR+		3.0
26471	Tenodesis; for proximal interphalangeal joint stabilization	8.0	120	3.0
26474	for distal joint stabilization	7.0	120	3.0
26476	Tendon lengthening, extensor, single, each	8.0	120	3.0
26477	Tendon shortening, extensor, single, each	8.0	120	3.0
26480	Tendon transfer or transplant, carpometacarpal area or dorsum of hand, single; without free graft, each	8.0	90	3.0
26483	with free tendon graft (includes obtaining graft), each tendon	11.0	90	3.0
26485	Tendon transfer or transplant, palmar, single, each tendon, without free tendon graft	10.0	90	3.0
26489	with free tendon graft (includes obtaining graft), each tendon	11.0	90	3.0
26490	Opponens plasty, sublimis tendon transfer type	9.5	120	3.0
26492	tendon transfer with graft (includes obtaining graft)	11.0	120	3.0
26494	hypothenar muscle transfer	12.0	120	3.0
26496	other methods	BR		3.0
	(For thumb fusion in opposition, see 26820)			
26497	Sublimis transfer to correct claw finger; IV and V	BR		3.0
26498	II, III, IV and V	BR		3.0
26499	Correction claw finger, other methods	BR		3.0
26500	Tendon pulley reconstruction; with local tissues (separate procedure)	6.0	90	3.0
26502	with tendon or fascial graft (includes obtaining graft) (separate procedure)	8.0	90	3.0
26508	Thenar muscle release for thumb contracture	8.0	90	3.0
26516	Capsulodesis for M-P joint stabilization; single digit	6.0	90	3.0
26517	two digits	8.0	90	3.0
26518	three or four digits	10.0	90	3.0
26520	Capsulectomy for contracture, metacarpophalangeal joint, single, each	7.0	90	3.0
26525	interphalangeal joint, single, each	7.0	90	3.0
26527	Arthroplasty, carpometacarpal joint	BR		3.0
26530	Arthroplasty, metacarpophalangeal joint, single, each	7.0	90	3.0
26531	with prosthetic implant, single, each	9.0	90	3.0
26535	Arthroplasty interphalangeal joint; single, each	8.0	90	3.0
26536	with prosthetic implant, single, each	11.3	90	3.0
26540	Reconstruction, collateral ligament, metacarpophalangeal joint	10.0	90	3.0
26541	with tendon or fascial graft (includes obtaining graft)	12.0	90	3.0
26545	Reconstruction, collateral ligament, interphalangeal joint, single, including graft, each joint	8.0	90	3.0
26550	Pollicization of a digit	BR		3.0
26552	Reconstruction thumb with toe	BR		
26555	Positional change of other finger	BR		3.0
26557	Toe to finger transfer; first stage	BR		3.0
26558	each delay	BR		3.0
26559	second stage	BR		3.0
26560	Repair of syndactyly (web finger), each web space; with skin flaps	9.5	45	3.0

		Unit Value	Follow-up Days=	Basic Anes@
26561	with skin flaps and grafts	12.5	45	3.0
26562	complex, involving bone, nails, etc.	BR		3.0
26565	Osteotomy for correction of deformity; metacarpal	8.0	90	3.0
26567	phalanx	5.0	90	3.0
26570	Bone graft, (includes obtaining graft); metacarpal	10.0	120	3.0
26574	phalanx	7.0	120	3.0
26580	Repair cleft hand	BR		
26585	Repair bifid digit	BR		
26590	Repair macrodactylia	BR		
26591	Repair, intrinsic muscles of hand (specify)	BR		3.0
	(For microsurgical technique, use modifier –20)			
26593	Release, intrinsic muscles of hand (specify)	BR		3.0
	(For microsurgical technique, use modifier –20)			

FRACTURES AND/OR DISLOCATION

26600	Treatment of closed metacarpal fracture, single; without manipulation, each bone	Sv.&		
26605	with manipulation, each bone .	2.4	90	3.0
26607	with manipulation, with skeletal fixation, each bone	BR		3.0
26610	Treatment of open metacarpal fracture, single, with uncomplicated soft tissue closure, each bone	3.0	90	3.0
26615	Open treatment of closed or open metacarpal fracture, single, with or without internal or external skeletal fixation, each bone	7.0	90	3.0
26641	Treatment of carpometacarpal dislocation, thumb, with manipulation	Sv.&		
26645	Treatment of closed carpometacarpal fracture dislocation, thumb (Bennett fracture), with manipulation;	4.0	45	3.0
26650	with skeletal fixation	6.0	45	3.0
26655	Treatment of open carpometacarpal fracture dislocation, thumb (Bennett fracture), with uncomplicated soft tissue closure;	5.0	45	3.0
26660	with skeletal fixation	7.0	45	3.0
26665	Open treatment of closed or open carpometacarpal fracture dislocation, thumb (Bennett fracture), with or without internal or external skeletal fixation	10.0	90	3.0
*26670	Treatment of closed carpometacarpal dislocation, other than Bennett fracture, single, with manipulation; without anesthesia	*0.72	0	
26675	requiring anesthesia	2.0	45	3.0
26680	Treatment of open carpometacarpal dislocation, other than Bennett fracture, single, with uncomplicated soft tissue closure .	3.0	45	3.0
26685	Open treatment of closed or open carpometacarpal dislocation, other than Bennett fracture; single, with or without internal or external skeletal fixation	6.0	90	3.0
26686	complex, multiple or delayed reduction	BR		
*26700	Treatment of closed metacarpophalangeal dislocation, single, with manipulation; without anesthesia	*0.72	0	
26705	requiring anesthesia	2.0	45	3.0
26710	Treatment of open metacarpophalangeal dislocation, single, with uncomplicated soft tissue closure	3.0	45	3.0
26715	Open treatment of closed or open metacarpal phalangeal dislocation, single, with or without internal or external skeletal fixation	6.0	90	3.0
26720	Treatment of closed phalangeal shaft fracture, proximal or middle phalanx, finger or thumb; without manipulation, each	Sv.&		
26725	with manipulation, each	1.6	45	3.0
26727	Treatment of unstable phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with manipulation, requiring traction or fixation, each.....	2.0	45	3.0
26730	Treatment of open phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with uncomplicated soft tissue closure, each	2.2	45	3.0
26735	Open treatment of closed or open phalangeal shaft fracture, proximal or middle phalanx, finger or thumb, with or without internal or external skeletal fixation, each	4.0	60	3.0
26740	Treatment of closed articular fracture, involving metacarpophalangeal or proximal interphalangeal joint; without manipulation, each	Sv.		
26742	with manipulation, each	2.0	60	3.0
26743	with manipulation requiring traction for fixation, each	4.0	60	3.0
26744	Treatment of open articular fracture, involving metacarpophalangeal or proximal interphalangeal joint, with uncomplicated soft tissue closure, each	1.5	60	3.0
26746	Open treatment of closed or open articular fracture, involving metacarpophalangeal or proximal interphalangeal joint, each.....	6.0	60	3.0
26750	Treatment of closed distal phalangeal fracture, finger or thumb; without manipulation, each	Sv.&		
26755	with manipulation, each	*0.72	0	3.0
26760	Treatment of open distal phalangeal fracture, finger or thumb, with uncomplicated soft tissue closure, each	1.2	30	3.0
26765	Open treatment of closed or open distal phalangeal fracture, finger or thumb, each.....	2.0	45	3.0
26770	Treatment of closed interphalangeal joint dislocation, single, with manipulation; without anesthesia	*0.72	0	
26775	requiring anesthesia	1.2	45	3.0
26780	Treatment of open interphalangeal joint dislocation, single, with			

		Unit Value	Follow-up Days=	Basic Anes@
	uncomplicated soft tissue closure	1.6	45	3.0
26785	Open treatment of closed or open interphalangeal joint dislocation, single	2.4	60	3.0
ARTHRODESIS				
26820	Fusion in opposition, thumb, with autogenous graft (includes obtaining graft)	10.0	120	3.0
26841	Arthrodesis, carpometacarpal joint, thumb, with or without internal fixation;	8.0	120	3.0
26842	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26843	Arthrodesis, carpometacarpal joint, digits, other than thumb;	8.0	120	3.0
26844	with autogenous graft (includes obtaining graft)	10.0	120	3.0
26850	Arthrodesis metacarpophalangeal joint, with or without internal fixation	7.0	120	3.0
26852	with autogenous graft (includes obtaining graft)	8.0	120	3.0
26860	Arthrodesis, interphalangeal joint, with or without internal fixation	5.0	120	3.0
26861	each additional interphalangeal joint	4.0	120	3.0
26862	with autogenous graft (includes obtaining graft)	6.0	120	3.0
26863	with autogenous graft (includes obtaining graft), each additional joint	5.0	120	3.0
AMPUTATION				
	(For hand through metacarpal bones, see 25927)			
26910	Amputation, metacarpal, with finger or thumb (ray amputation), single, with or without interosseous transfer	7.0	90	3.0
	(For repositioning, see 26550-26555)			
26951	Amputation, finger or thumb, primary or secondary, any joint or phalanx, single, including neurectomies; with direct closure	3.5	45	3.0
26952	with local advancement flaps (V-Y, hood)	5.0	45	3.0
	(For repair of soft tissue defect requiring split or full thickness graft or other pedicle grafts, see 15050-15750)			
MISCELLANEOUS				
26989	Unlisted procedure, hands or fingers	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-073, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-073, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-073, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-073, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-073, filed 1/30/74.]

WAC 296-22-079 Pelvis and hip joint.

(Including head and neck of femur)

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
	(For perineal abscess, see 45020, 46050, 46060)			
	(For incision and drainage procedures, superficial, see 10000-10160)			
26990	Incision and drainage; deep abscess or hematoma	BR		3.0
26991	infected bursa	BR		3.0
26992	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
26995	with suction irrigation	BR		3.0
*27000	Tenotomy, adductor, subcutaneous, closed (separate procedure)	*1.0	0	3.0
27001	Tenotomy, adductor, subcutaneous, open; unilateral	3.0	45	3.0
27002	bilateral	4.0	45	3.0
27003	Tenotomy, adductor, subcutaneous, open; with obturator neurectomy; unilateral	5.0	45	3.0
27004	bilateral	6.0	45	3.0
27005	Tenotomy, iliopsoas, open (separate procedure)	6.0	45	3.0
27006	Tenotomy, abductors, open (separate procedure)	6.0	60	3.0
	(For "hanging hip" procedure, see 27115)			
27010	Gluteal-iliotibial fasciotomy (Ober type procedure)	6.0	45	3.0
27015	Iliac crest fasciotomy (Soutter or Campbell type procedure), stripping of ilium	8.0	90	3.0
27025	Ober-Yount fasciotomy, combined with spica cast, pins in tibia, wedging the cast, etc.; unilateral	10.0	90	3.0
27026	bilateral	12.0	90	3.0
27030	Arthrotomy, hip, for drainage;	14.0	90	3.0
27031	with suction irrigation	15.0	90	3.0
27033	Arthrotomy, hip, for exploration or removal of loose or foreign body	16.0	90	3.0
27035	Hip joint denervation, intrapelvic or extrapelvic intra-articular branches of sciatic, femoral or obturator nerves	17.0	60	3.0
	(For obturator neurectomy, see 64763-64768)			
EXCISION				
27040	Biopsy, soft tissues; superficial	1.2	7	3.0
27041	deep	2.4	15	3.0
27047	Excision, benign tumor; subcutaneous	3.0	7	3.0
27048	deep, subfascial, intramuscular	4.0	15	3.0
27050	Arthrotomy, for biopsy; sacroiliac joint	6.0	90	3.0
27052	hip joint	14.0	90	3.0
27054	Arthrotomy for synovectomy, hip joint	20.0	90	3.0
27060	Excision; ischial bursa	5.0	60	3.0
27062	trochanteric bursa or calcification	4.0	60	3.0
	(For arthrocentesis or needling of bursa, see 20610)			

		Unit Value	Follow-up Days=	Basic Anes@
27065	Excision of bone cyst or benign tumor; superficial (wing of ilium, symphysis pubis or greater trochanter of femur) with or without autogenous bone graft	5.0	120	3.0
27066	deep, with or without bone graft	9.5	120	3.0
27067	with bone graft requiring separate incision	10.0	120	3.0
27070	Partial excision of bone (craterization, saucerization), for osteomyelitis; superficial (e.g., wing of ilium, symphysis pubis or greater trochanter of femur)	6.0	60	3.0
27071	deep	12.0	60	3.0
27075	Radical resection for tumor or infection; wing of ilium; one pubic or ischial ramus or symphysis pubis	BR		5.0
27076	ilium, including acetabulum, both pubic rami, or ischium and acetabulum	BR		3.0
27077	innominate bone, total	BR		3.0
27078	ischial tuberosity and greater trochanter of femur	BR		3.0
27079	ischial tuberosity and greater trochanter of femur, with skin flaps	BR		3.0
	(For amputation, either interpelviabdominal or hip disarticulation type, see 27290, 27295)			
27080	Coccygectomy primary	6.0	90	3.0
	INTRODUCTION AND/OR REMOVAL			
27086	Removal of foreign body; subcutaneous tissue	BR		3.0
27087	deep	BR		3.0
27088	deep, complicated	BR		3.0
	(For wire or pin insertion, see 20650)			
27090	Removal of hip prosthesis; (separate procedure)	14.0	90	3.0
27091	complicated, including "total hip"	BR		7.0
27093	Injection procedure for hip arthrography; without anesthesia	BR		3.0
27095	with anesthesia	BR		3.0
	(For hip arthrography, see 73525)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For abdominal fascial transplant, bilateral (Lowman type procedure), see 22910)			
	(For repair of deep wound, see 20800)			
27097	Hamstring recession, proximal	BR		3.0
27098	Adductor transfer to ischium	BR		3.0
27100	Transfer external oblique muscle to greater trochanter including fascial or tendon extension (graft)	15.0	120	5.0
27105	Transfer paraspinal muscle to hip (includes fascial or tendon graft)	16.0	120	3.0
27110	Transfer iliopsoas to greater trochanter	18.0	120	3.0
27111	to femoral neck	15.0	120	3.0
27115	Muscle release, complete (hanging hip operation)	BR		5.0
27120	Acetabuloplasty; (Whittman or Colonna type procedure)	24.0	120	6.0
27122	resection femoral head (Girdlestone procedure)	20.0	120	7.0
27125	Arthroplasty; prosthesis	28.0	180	7.0
27126	cup	26.0	180	6.0
27127	cup with acetabuloplasty	34.0	180	7.0
27130	Arthroplasty, acetabular and proximal femoral prosthetic replacement (total hip replacement); simple	40.0	180	7.0
27131	complex	BR		7.0
27135	Secondary reconstruction or revision of arthroplasty, any type	BR		7.0
27140	Osteotomy and transfer of greater trochanter (separate procedure)	12.0	90	3.0
27146	Osteotomy, iliac, acetabular or innominate bone;	24.0	120	4.0
27147	with open reduction of hip			
27151	with femoral osteotomy	27.0	120	4.0
27156	with femoral osteotomy and with open reduction of hip	30.0	120	4.0
27157	Acetabular augmentation (Wilson procedure)	BR	120	5.0
27158	Osteotomy, pelvis, bilateral for congenital malformation	BR		5.0
27161	Osteotomy, femoral neck, (separate procedure)	20.0	120	3.0
27165	Osteotomy, intertrochanteric or subtrochanteric including internal or external fixation and/or cast	24.0	120	5.0
27170	Bone graft for nonunion, femoral head, neck, intertrochanteric or subtrochanteric area (includes obtaining bone graft)	24.0	120	6.0
27175	Treatment of slipped femoral epiphysis; by traction, without reduction	Sv.&		
27176	by single or multiple pinning, in situ	20.0	120	3.0
27177	Open treatment of slipped femoral epiphysis; single or multiple pinning or bone graft (includes obtaining graft)	22.0	120	5.0
27178	closed manipulation with single or multiple pinning	21.0	120	5.0
27179	osteoplasty of femoral neck (Heyman type procedure)	16.0	120	5.0
27181	osteotomy and internal fixation	24.0	120	5.0
27185	Epiphyseal arrest by epiphysiodes or stapling, greater trochanter	5.0	120	3.0
	FRACTURES AND/OR DISLOCATIONS			
27190	Treatment of closed sacral fracture; without manipulation	Sv.&		
27191	with manipulation	BR		3.0
27192	Open treatment of closed or open sacral fracture	BR		3.0
27195	Treatment of sacroiliac and/or symphysis pubis dislocation, without manipulation	Sv.&		
27196	Treatment of sacroiliac and/or symphysis pubis dislocation, with anesthesia and with manipulation	BR		3.0
27200	Treatment of closed coccygeal fracture	Sv.&		
27201	Treatment of open coccygeal fracture	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
27202	Open treatment of closed or open coccygeal fracture	BR		3.0
27210	Treatment of closed iliac, pubic or ischial fracture, without manipulation, single	Sv.&		
27211	more than one	BR		
27212	Treatment of open iliac, pubic or ischial fracture, with uncomplicated soft tissue closure	Sv.&		3.0
27214	Open treatment of closed or open iliac, pubic or ischial fracture, with or without internal or external skeletal fixation	BR		4.0
27220	Treatment of closed acetabulum (hip socket) fracture(s); without manipulation	Sv.&		
27222	with manipulation with or without skeletal traction	8.0	90	3.0
27224	Open treatment of closed or open acetabulum (hip socket) fracture(s), with or without internal or external fixation, simple	22.0	90	5.0
27225	complicated, intrapelvic approach	BR		5.0
27230	Treatment of closed femoral fracture, proximal end, neck; without manipulation	Sv.&		
27232	with manipulation including skeletal traction	9.5	90	3.0
27234	Treatment of open femoral fracture, proximal end, neck; with uncomplicated soft tissue closure, with manipulation (including skeletal traction)	12.0	90	3.0
27235	Treatment of closed or open femoral fracture, proximal end, neck, in situ pinning of undisplaced or impacted fracture	20.0	180	4.0
27236	Open treatment of closed or open femoral fracture, proximal end, neck, internal fixation or prosthetic replacement	22.0	120	6.0
27238	Treatment of closed intertrochanteric or pertrochanteric femoral fracture; without manipulation	Sv.&		
27240	with manipulation (including skeletal traction)	9.5	90	3.0
27242	Treatment of open intertrochanteric or pertrochanteric femoral fracture, with uncomplicated soft tissue closure (including traction)	12.0	90	3.0
27244	Open treatment of closed or open intertrochanteric or pertrochanteric femoral fracture, with internal fixation	20.0	120	6.0
27246	Treatment of closed greater trochanteric fracture, without manipulation	Sv.&		
27248	Open treatment of closed or open greater trochanteric fracture, with or without internal or external skeletal fixation	7.0	90	5.0
27250	Treatment of closed hip dislocation, traumatic; without anesthesia	Sv.&		
27252	requiring anesthesia	4.8	120	3.0
27253	Open treatment of closed or open hip dislocation, traumatic, without internal fixation	15.0	180	5.0
27254	Open treatment of closed or open hip dislocation, traumatic, with acetabular lip fixation, with or without internal or external skeletal fixation;	17.0	120	5.0
27255	complicated or late	22.0	180	5.0
27256	Treatment of congenital hip dislocation, by abduction, splint or traction; any method	Sv.&		3.0
27257	with manipulation requiring anesthesia	4.5	45	3.0
27258	Open treatment of congenital hip dislocation; replacement of femoral head in acetabulum (including tenotomy, etc.)	17.0	120	5.0
27259	with femoral shaft shortening	BR	120	5.0
	MANIPULATION			
*27275	Manipulation, hip joint, requiring general anesthesia	*1.2	0	3.0
	ARTHRODESIS			
27280	Arthrodesis, sacroiliac joint (including obtaining graft); unilateral	14.0	120	5.0
27281	bilateral	20.0	120	5.0
27282	Arthrodesis, symphysis pubis (including obtaining graft)	BR		4.0
27284	Arthrodesis, hip joint (including obtaining graft);	24.0	180	5.0
27286	with subtrochanteric osteotomy	26.0	180	5.0
	AMPUTATION			
27290	Interpelviabdominal amputation (hind quarter amputation)	29.0	120	11.0
27295	Disarticulation of hip	24.0	120	8.0
	MISCELLANEOUS			
27299	Unlisted procedure, pelvis or hip joint	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-079, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-079, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-079, filed 1/30/74.]

WAC 296-22-082 Femur (thigh region) and knee joint.

(Including tibial plateaus)

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For incision and drainage of abscess or hematoma, superficial, see 10000-10160)			
27301	Incision and drainage of deep abscess, infected bursa, or hematoma	BR		3.0
27303	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
27304	with suction irrigation	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For open tenotomy, see 27390, 27392)			
27305	Fasciotomy, iliotibial (tenotomy), open	6.0	45	3.0
	(For combined Ober-Yount fasciotomy, see 27025)			
27306	Tenotomy, subcutaneous, closed, adductor or hamstring, (separate procedure); single	1.2	60	3.0
27307	multiple	4.0	60	3.0
27310	Arthrotomy, knee, with exploration, drainage or removal of foreign body;	12.0	90	3.0
27311	with suction irrigation	13.0	90	3.0
27315	Neurectomy, hamstring muscle	11.0	30	3.0
27320	Neurectomy, popliteal (gastrocnemius)	11.0	30	3.0
	EXCISION			
27323	Biopsy, soft tissues; superficial	1.2	7	3.0
27324	deep	2.4	15	3.0
27327	Excision, benign tumor; subcutaneous	3.0	7	3.0
27328	deep, subfascial, or intramuscular	4.0	15	3.0
27330	Arthrotomy, knee; for synovial biopsy only	12.0	90	3.0
27331	with joint exploration, with or without biopsy, with or without removal of loose bodies	13.0	90	3.0
27332	Arthrotomy, knee, for excision of semilunar cartilage (meniscectomy); medial OR lateral	14.0	90	3.0
27333	medial AND lateral	20.0	90	3.0
27334	Arthrotomy, knee, for synovectomy; anterior OR posterior	17.0	120	3.0
27335	anterior AND posterior including popliteal area	14.0	120	3.0
27340	Excision, prepatellar bursa	5.0	60	3.0
27345	Excision of synovial cyst of popliteal space (Baker's cyst)	8.0	60	3.0
27350	Patellectomy or hemipatellectomy	12.0	90	3.0
27355	Excision or curettage of bone cyst or benign tumor of femur	11.0	60	3.0
27356	with homogenous graft	12.0	60	3.0
27357	with primary autogenous graft (includes obtaining graft)	14.0	120	3.0
27358	with internal fixation (list in addition to 27355, 27356, or 27357)	15.0	120	3.0
27360	Excision of bone, partial (craterization, saucerization or diaphysectomy), for osteomyelitis, femur, proximal tibia and/or fibula;	10.0	60	3.0
27361	with suction irrigation	13.0	120	3.0
27365	Radical resection for tumor (bone or soft tissue)	BR+		3.0
	INTRODUCTION AND/OR REMOVAL			
	(For arthrocentesis or needling of bursa or joint, see 20610)			
	(For removal of Rush pin, intramedullary rod, etc., see 20680)			
27370	Injection procedure for knee arthrography	0.6	0	
	(For knee arthrography, see 73580, 73581)			
27372	Removal foreign body, deep	BR		
27373	Arthroscopy, knee, diagnostic (separate procedure);	5.4		3.0
27374	Arthroscopy, knee, surgical; debridement with cartilage shaving and/or drilling and/or resection of reactive synovium	17.3	30	3.0
	(27375 Arthroscopy, knee has been revised as 27373)			
27376	with synovial biopsy	14.7	90	3.0
27377	with removal of loose body	15.7	90	3.0
27378	with partial meniscectomy	16.7	90	3.0
27379	with plica resection and/or shelf resection	17.4	90	3.0
	(When knee arthroscopy is performed in conjunction with arthrotomy, see Modifier -50)			
	REPAIR, REVISION OR RECONSTRUCTION			
	(For repair of deep wound, see 20800)			
27380	Suture of infrapatellar tendon; primary	11.0	90	3.0
27381	secondary reconstruction, including fascial or tendon graft	BR		
27385	Suture of quadriceps or hamstring muscle rupture; primary	13.0	90	3.0
27386	secondary reconstruction, including fascial or tendon graft	15.0	90	3.0
27390	Tenotomy, open, hamstring, knee to hip; single	6.0	45	3.0
27391	multiple, one leg	6.0	90	3.0
27392	multiple, bilateral	8.0	45	3.0
27393	Lengthening of hamstring tendon; single	8.0	90	3.0
27394	multiple, one leg	12.0	90	3.0
27395	multiple, bilateral	16.0	120	3.0
	(For subcutaneous tenotomy, see 27300, 27302)			
27396	Transplant, hamstring tendon to patella; single	16.0	120	3.0
27397	multiple	14.0	120	3.0
27400	Tendon or muscle transfer, hamstrings to femur (Eggers type procedure)	16.0	120	3.0
27405	Suture, primary, torn, ruptured or severed ligament, with or without meniscectomy, knee; collateral	14.0	120	3.0
27407	cruciate	16.0	120	3.0
27408	collateral, with pes anserinus transfer	14.0	120	3.0
27409	collateral and cruciate ligaments	18.0	120	3.0
27410	Suture, secondary repair, torn, ruptured, or severed ligament, with or without meniscectomy, knee; collateral OR cruciate ligament	19.0	120	3.0
27411	medial ligament and capsule	19.0	120	3.0
27413	collateral or cruciate ligament, with pes anserinus transfer or fascial or tendon graft	23.0	120	3.0
27414	Suture, secondary repair, torn, ruptured, or severed ligament with or without meniscectomy, knee,			

		Unit Value	Follow–up Days=	Basic Anes@
	collateral AND cruciate ligaments	22.0	120	3.0
27415	with pes anserinus transfer or fascial or tendon graft	23.0	120	3.0
27416	Advancement, pes anserinus, Slocum type procedure, (separate procedure)	14.0	120	3.0
27418	Anterior tibial tubercle plasty for chondromalacia patellae (Maquet procedure)	14.0	120	3.0
27420	Reconstruction for recurrent dislocating patella; (Hauser type procedure)	14.0	120	3.0
27422	with extensor realignment and/or muscle advancement or release (Campbell, Goldthwaite, etc., type procedure)	15.0	120	3.0
27424	with patellectomy	17.0	120	3.0
27425	Lateral retinacular release (any method)	6.0	120	3.0
27430	Quadriceps plasty (Bennett or Thompson type)	15.0	120	3.0
27435	Capsulotomy, knee, posterior capsular release	14.0	90	3.0
27436	Arthroscopy, knee, with internal fixation of osteochondral fragment	BR		3.0
	(When knee arthroscopy is performed in conjunction with arthrotomy, see modifier –50)			
27437	Arthroplasty, patella; without prosthesis	BR		3.0
27438	with prosthesis	22.0	120	3.0
27440	Arthroplasty, knee, tibial plateau;	20.0	120	3.0
27441	with debridement and partial synovectomy	BR	120	3.0
27442	Arthroplasty, knee, femoral condyles or tibial plateaus	24.0	120	3.0
27443	with debridement and partial synovectomy	BR		
27444	Arthroplasty, knee, total; fascial	28.0	120	3.0
27445	prosthetic (e.g., Walldius type)	28.0	120	3.0
27446	Arthroplasty, knee, total, condyle and plateau; medial OR lateral compartment	43.5	120	3.0
27447	medial AND lateral compartments with or without patella resurfacing ("total knee")	40.0	120	3.0
	(For revision of total knee arthroplasty, see 27487)			
	(For removal of total knee prosthesis, see 27488)			
27448	Osteotomy, femur, shaft or supracondylar, without fixation; unilateral	13.0	120	3.0
27449	bilateral	15.0	120	3.0
27450	Osteotomy, femur, shaft or supracondylar, with fixation; unilateral	19.0	90	3.0
27452	bilateral	24.0	120	3.0
27454	Osteotomy, multiple, femoral shaft, with realignment on intramedullary rod (Sofield type procedure)	20.0	90	3.0
27455	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus (bowleg) or genu valgus (knock knee)), unilateral; before epiphyseal closure	12.0	90	3.0
27457	after epiphyseal closure	14.0	90	3.0
27460	Osteotomy, proximal tibia, including fibular excision or osteotomy (includes correction of genu varus (bowleg) or genu valgus (knock–knee), bilateral; before epiphyseal closure	18.0	90	3.0
27462	after epiphyseal closure	21.0	90	3.0
27465	Osteoplasty, femur; shortening	20.0	180	3.0
27466	lengthening	26.0	180	3.0
27468	combined, lengthening and shortening with femoral segment transfer	40.0	180	4.0
27470	Repair, nonunion or malunion, femur, distal to head and neck; without graft (e.g., compression technic, etc.)	20.0	120	3.0
27472	with iliac or other autogenous bone graft (includes obtaining graft)	23.0	120	3.0
27475	Epiphyseal arrest by epiphysiodesis or stapling; distal femur	14.0	120	3.0
27477	tibia and fibula, proximal	16.0	120	3.0
27479	combined, distal femur, proximal tibia and fibula	20.0	120	3.0
27485	Arrest, hemiepiphyseal, distal femur or proximal leg (e.g., for genu varus or valgus)	11.0	120	3.0
27487	Secondary reconstruction for revision of total knee arthroplasty	BR		
27488	Removal of knee prosthesis, including "total knee"	BR		
27490	Arthroscopy, knee, for meniscus repair (meniscorrhesis)	BR		3.0
	(When knee arthroscopy is performed in conjunction with arthrotomy, add modifier –50)			
	FRACTURES AND/OR DISLOCATION			
27500	Treatment of closed femoral shaft fracture (including supracondylar); without manipulation (includes traction)	Sv.&		
27502	with manipulation	7.0	90	3.0
27504	Treatment of open femoral shaft fracture (including supracondylar), with uncomplicated soft tissue closure	11.0	90	3.0
27506	Open treatment of closed or open femoral shaft fracture (including supracondylar), with or without internal or external skeletal fixation	19.0	90	3.0
27508	Treatment of closed femoral fracture, distal end, medial or lateral condyle; without manipulation	Sv.&		
27510	with manipulation	8.0	90	3.0
27512	Treatment of open femoral fracture, distal end, medial or lateral condyle, with uncomplicated soft tissue closure	12.0	90	3.0
27514	Open treatment of closed or open femoral fracture, distal end, medial or lateral condyle, with or without internal or external skeletal fixation	20.0	90	3.0
27516	Treatment of closed distal femoral epiphyseal separation; without manipulation (includes traction)	SV		
27517	with manipulation	7.0	120	3.0

		Unit Value	Follow-up Days=	Basic Anes@
27518	Treatment of open distal femoral epiphyseal separation, with uncomplicated soft tissue closure ...	8.0	120	3.0
27519	Open treatment of closed or open distal femoral epiphyseal separation, with or without internal or external skeletal fixation	18.0	120	3.0
27520	Treatment of closed patellar fracture, without manipulation	Sv.&		
27522	Treatment of open patellar fracture, with uncomplicated soft tissue closure	4.0	90	3.0
27524	Open treatment of closed or open patellar fracture, with repair and/or excision	12.0	90	3.0
27530	Treatment of closed tibial fracture, proximal (plateau); without manipulation	Sv.&		
27532	with manipulation	5.0	90	3.0
27534	Treatment of open tibial fracture, proximal (plateau), with uncomplicated soft tissue closure	8.0	90	3.0
27536	Open treatment of closed or open tibial fracture, proximal (plateau), with or without internal or external skeletal fixation;	14.0	90	3.0
27537	with autogenous graft (includes obtaining graft)	16.0	120	3.0
27538	Treatment of closed intercondylar spine(s) fracture(s)	Sv.&		
27540	Open treatment of closed or open intercondylar spine(s) fractures(s), with internal fixation	14.0	90	3.0
27550	Treatment of closed knee dislocation; without anesthesia	Sv.&		
27552	requiring anesthesia	3.6	45	3.0
27554	Treatment of open knee dislocation, with uncomplicated soft tissue closure	7.0	45	3.0
27556	Open treatment of closed or open knee dislocation, with or without internal or external skeletal fixation; without primary ligamentous repair	15.0	90	3.0
27557	with primary ligamentous repair	BR	120	3.0
27560	Treatment of closed patellar dislocation; without anesthesia	Sv.&		
	(For recurrent dislocation, see 27420–27424)			
27562	requiring anesthesia	3.6	45	3.0
27564	Treatment of open patellar dislocation, with uncomplicated soft tissue closure	5.0	45	3.0
27566	Open treatment of closed or open patellar dislocation, with or without partial or total patellectomy .	12.0	90	3.0
	(For recurrent dislocation, see 27420–27424)			
	MANIPULATION			
*27570	Manipulation of knee joint under general anesthesia (includes application of traction or other fixation devices)	*1.2	0	3.0
	ARTHRODESIS			
27580	Fusion of knee, any technique ...	20.0	120	3.0
	AMPUTATION			
27590	Amputation, thigh, through femur, any level;	14.5	120	4.0
27591	immediate fitting technique including first cast	BR	30	3.0
27592	open, circular (guillotine)	14.0	120	4.0
27594	secondary closure or scar revision	Sv.&		3.0
27596	reamputation	BR+		4.0
27598	Disarticulation at knee	14.0	120	4.0
	MISCELLANEOUS			
27599	Unlisted procedure, femur or knee	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-082, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-082, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-082, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-082, filed 12/3/80, effective 3/1/81; Order 76-34, § 296-22-082, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-22-082, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-22-082, filed 1/30/74.]

WAC 296-22-087 Leg (tibia and fibula) and ankle joint.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
27600	Fasciotomy, leg, anterior compartment, for closed spaced decompression;	5.0	30	3.0
27602	including posterior compartment decompression	7.0	30	3.0
	(For incision and drainage procedures, superficial, see 10000–10160)			
27603	Incision and drainage; deep abscess or hematoma	BR		
27604	infected bursa	SV		
27605	Tenotomy, Achilles tendon, subcutaneous (separate procedure); local anesthesia	1.0	0	3.0
27606	general anesthesia	2.0	0	3.0
27607	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
27608	with suction irrigation	BR		30.0
27610	Arthrotomy, ankle, with exploration, drainage or removal of loose or foreign body;	9.0	60	3.0
27611	with suction irrigation	10.0	120	3.0
27612	Arthrotomy, ankle, posterior capsular release, with or without Achilles tendon lengthening (see also 27685)	10.0	60	3.0
	(See also 27685)			
	EXCISION			
27613	Biopsy, soft tissues; superficial ..	1.2	7	3.0
27614	deep	2.4	15	3.0
27618	Excision, benign tumor; subcutaneous	3.0	7	3.0
27619	deep, subfascial or intramuscular	4.0	15	3.0

		Unit Value	Follow-up Days=	Basic Anes@
27620	Arthrotomy (capsulotomy), ankle, for biopsy	9.0	60	3.0
27625	Arthrotomy, ankle, for synovectomy;	12.0	90	3.0
27626	including tenosynovectomy	14.0	90	3.0
27630	Excision of lesion of tendon, sheath or capsule (e.g., cyst or ganglion, etc.)	3.6	30	3.0
27635	Excision, or curettage, of bone cyst or benign tumor, tibia or fibula;	10.0	60	3.0
27637	with primary autogenous graft (includes obtaining graft)	13.0	120	3.0
27638	with primary homogenous graft	14.0	120	3.0
27640	Excision of bone, partial, (craterization, saucerization or diaphysectomy) for osteomyelitis; tibia	12.0	60	3.0
27641	fibula	10.0	60	3.0
27645	Resection for tumor, radical; tibia	BR		3.0
27646	fibula	BR		3.0
27647	talus or calcaneus	BR		3.0

INTRODUCTION OR REMOVAL

(For arthrocentesis or needling of bursa or joint, see 20605)

(For removal of Rush pin, intramedullary rod, Lottes nail, etc., see 20680)

27648	Injection procedure for ankle arthrography	BR		

(For ankle arthrography, see 73615)

(For ankle arthroscopy, see 27850–27853)

REPAIR, REVISION OR RECONSTRUCTION

(For repair of deep wound, see 20800)

27650	Suture, primary, ruptured Achilles tendon	11.0	120	3.0
27652	with graft (includes obtaining graft)	14.0	120	3.0
27654	Suture, secondary, ruptured Achilles tendon, with or without graft	14.0	120	3.0
27656	Repair, fascial defect of leg	6.0	45	3.0
27658	Repair or suture of flexor tendon of leg; primary, without free graft, single, each	6.0	90	3.0
27659	secondary with or without free graft, single tendon, each	8.0	90	3.0
27664	Repair or suture of extensor tendon of leg; primary, without free graft, single, each	4.0	90	3.0
27665	secondary with or without free graft, single tendon, each	6.0	90	3.0
27675	Repair for dislocating peroneal tendons; without fibular osteotomy	5.0	90	3.0
27676	with fibular osteotomy	6.0	90	3.0
27680	Tenolysis, including tibia, fibula and ankle flexor, single	5.0	60	3.0
27681	multiple (through same incision), each	6.0	60	3.0
27685	Lengthening or shortening of tendon; single (separate procedure)	7.0	90	3.0
27686	multiple (through same incision), each	8.0	120	3.0
27687	Gastrocnemius recession (e.g., Strayer procedure)	7.0	120	3.0

(Toe extensors are considered as a group to be a single tendon when transplanted into midfoot)

27690	Transfer or transplant of single tendon (with muscle redirection or rerouting); superficial (e.g., anterior tibial extensors into midfoot)	8.0	120	3.0
27691	anterior tibial or posterior tibial through interosseous space	10.0	120	3.0
27692	each additional tendon	2.0		
27695	Suture, primary, torn, ruptured or severed ligament, ankle; collateral	10.0	120	3.0
27696	both collateral ligaments	14.0	120	3.0
27698	Suture, secondary repair, torn, ruptured or severed ligament; ankle, collateral (e.g., Watson–Jones procedure)	14.0	120	3.0
27700	Arthroplasty, ankle;	BR		3.0
27702	with implant ("total ankle")	BR		3.0
27704	Removal of ankle implant	BR		
27705	Osteotomy; tibia	12.0	90	3.0
27707	fibula	7.0	90	3.0
27709	tibia and fibula	14.0	90	3.0
27712	multiple, with realignment on intramedullary rod (Sofield type procedure)	18.0	90	3.0

(For osteotomy to correct genu varus (bowleg) or genu valgus (knock–knee), see 27455–27462)

27715	Osteoplasty, tibia and fibula, lengthening	24.0	90	3.0
27720	Repair of nonunion or malunion, tibia, without graft (e.g., compression technic, etc.)	18.0	90	3.0
27722	with sliding graft	20.0	120	3.0
27724	with iliac or other autogenous bone graft (includes obtaining graft)	22.0	120	3.0
27725	by synostosis, with fibula, any method	BR	120	3.0
27727	Repair of congenital pseudarthrosis, tibia	BR	120	3.0
27730	Epiphyseal arrest by epiphysiodesis or stapling, distal tibia	12.0	120	3.0
27732	distal fibula	6.0	120	3.0
27734	distal tibia and fibula	14.0	120	3.0
27740	Epiphyseal arrest by epiphysiodesis or stapling, combined, proximal and distal tibia and fibula;	18.0	120	3.0
27742	and distal femur	22.0	120	3.0

(For epiphyseal arrest of proximal tibia and fibula, see 27477)

FRACTURES AND/OR DISLOCATIONS

27750	Treatment of closed tibial shaft fracture; without manipulation	Sv.&		
27752	with manipulation	5.0	90	3.0
27754	Treatment of open tibial shaft fracture, with uncomplicated soft			

		Unit Value	Follow-up Days=	Basic Anes@
	tissue closure	6.5	90	3.0
27756	Open treatment of closed or open tibial shaft fracture, with internal or external skeletal fixation; simple	12.0	90	3.0
27758	complicated	17.9	120	3.0
27760	Treatment of closed distal tibial fracture (medial malleolus); without manipulation	Sv.&		
27762	with manipulation	3.0	90	3.0
27764	Treatment of open distal tibial fracture (medial malleolus) with uncomplicated soft tissue closure	4.4	90	3.0
27766	Open treatment of closed or open distal tibial fracture (medial malleolus), with fixation	9.0	90	3.0
27780	Treatment of closed proximal fibula or shaft fracture; without manipulation	Sv.&		
27781	with manipulation	3.0	90	3.0
27782	Treatment of open proximal fibula or shaft fracture, with uncomplicated soft tissue closure	4.0	90	3.0
27784	Open treatment of closed or open proximal fibula or shaft fracture, with or without internal or external skeletal fixation	8.0	90	3.0
27786	Treatment of closed distal fibular fracture (lateral malleolus); without manipulation	Sv.&		
27788	with manipulation	3.0	90	3.0
27790	Treatment of open distal fibular fracture (lateral malleolus), with uncomplicated soft tissue closure	4.0	90	3.0
27792	Open treatment of closed or open distal fibular fracture (lateral malleolus), with fixation	9.0	90	3.0
27800	Treatment of closed tibia and fibula fractures, shafts; without manipulation	Sv.&		
27802	with manipulation	6.5	90	3.0
27804	Treatment of open tibia and fibula fractures, shafts, with uncomplicated soft tissue closure (e.g., "pins above and below")	8.0	90	3.0
27806	Open treatment of closed or open tibia and fibula fractures, shafts, with or without internal or external skeletal fixation	14.5	90	3.0
27808	Treatment of closed bimalleolar ankle fracture, (including Potts); without manipulation	Sv.&		
27810	with manipulation	5.0	90	3.0
27812	Treatment of open bimalleolar ankle fracture, with uncomplicated soft tissue closure	6.5	90	3.0
27814	Open treatment of closed or open bimalleolar ankle fracture, with or without internal or external skeletal fixation	12.0	90	3.0
27816	Treatment of closed trimalleolar ankle fracture; without manipulation	Sv.&		
27818	with manipulation	6.0	90	3.0
27820	Treatment of open trimalleolar ankle fracture, with uncomplicated soft tissue closure	7.0	90	3.0
27822	Open treatment of closed or open trimalleolar ankle fracture, with or without internal or external skeletal fixation, medial and/or lateral malleolus; only	14.5	90	3.0
27823	including internal skeletal fixation of posterior lip (malleolus)	18.0	120	3.0
27830	Treatment of proximal tibiofibular joint dislocation; without anesthesia	Sv.&		
27831	requiring anesthesia	BR		3.0
27832	Open treatment of proximal tibiofibular joint dislocation with fixation or excision	8.0	90	3.0
27840	Treatment of ankle dislocation; without anesthesia	Sv.&		
*27842	requiring anesthesia	*2.0	45	3.0
27844	Treatment of open ankle dislocation, with uncomplicated soft tissue closure	3.2	45	3.0
27846	Open treatment of closed or open ankle dislocation	12.0	90	3.0
27848	with fixation	9.0	90	3.0
	ARTHROSCOPY			
27850	Arthroscopy, ankle, diagnostic (separate procedure)	6.0		3.0
27851	Arthroscopy, ankle, surgical; debridement with cartilage shaving and/or drilling and/or resection of reactive synovium	BR		3.0
27852	with synovial biopsy	8.0	90	3.0
27853	with removal of loose body	9.0	90	3.0
	(When ankle arthroscopy is performed in conjunction with arthrotomy, see modifier -51)			
	MANIPULATION			
*27860	Manipulation of ankle under general anesthesia (includes application of traction or other fixation apparatus)	*1.0	0	3.0
	ARTHRODESIS			
27870	Arthrodesis, ankle any method	17.0	120	3.0
27871	Arthrodesis, tibiofibular joint, proximal or distal	BR	120	3.0
	AMPUTATION			
27880	Amputation, leg, through tibia and fibula;	12.0	90	4.0
27881	with immediate fitting technique including application of first cast	12.0	90	4.0
27882	open, circular (guillotine)	10.5	90	4.0
*27884	secondary closure or scar revision	*Sv.&		3.0
27886	reamputation	BR		4.0
27888	Amputation, ankle, through malleoli of tibia and fibula (Syme, Pirogoff type procedures), with plastic closure and resection of nerves	12.0	90	3.0
27889	Ankle disarticulation	12.0	120	3.0
	MISCELLANEOUS			
27899	Unlisted procedure, leg or ankle	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-087, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-087, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030, and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-087, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-087, filed 1/30/74.]

WAC 296-22-091 Foot.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
	(For incision and drainage procedures, superficial, see 10000-10160)			
28001	Incision and drainage, infected bursa	SV		
28002	Deep infection, below fascia, requiring deep dissection, with or without tendon sheath involvement; single bursal space, specify	BR		3.0
28003	multiple areas	BR		3.0
28004	multiple areas with suction irrigation	BR		3.0
28005	Incision, deep, with opening of bone cortex for osteomyelitis or bone abscess;	BR		3.0
28006	with suction irrigation	BR		3.0
28008	Fasciotomy, plantar and/or toe, subcutaneous (see also 28060, 28062, 28250)	2.4	60	3.0
*28010	Tenotomy, subcutaneous, toe; single	*0.8	0	3.0
*28011	multiple	*1.2	0	3.0
	(For open tenotomy, see 28230, 28234)			
28020	Arthrotomy, with exploration, drainage or removal of loose or foreign body; intertarsal or tarsometrtarsal joint	6.0	60	3.0
28022	metatarsophalangeal joint	3.6	60	3.0
28024	interphalangeal joint	2.4	60	3.0
28030	Neurectomy of intrinsic musculature of foot	BR		3.0
28035	Tarsal tunnel release (posterior tibial nerve decompression)	8.0	60	3.0
	EXCISION			
	(For toenail, see 11730-11750)			
28043	Excision, benign tumor; subcutaneous	3.0	7	3.0
28045	deep, subfascial, intramuscular	4.0	15	3.0
28050	Arthrotomy for synovial biopsy; intertarsal or tarsometrtarsal joint	6.0	60	3.0
28052	metatarsophalangeal joint	3.6	60	3.0
28054	interphalangeal joint	2.4	60	3.0
28060	Faciectomy, excision of plantar fascia; partial (separate procedure)	6.0	60	3.0
28062	radical (separate procedure)	BR		3.0
	(For plantar fasciotomy, see 28008, 28250)			
28070	Synovectomy, intertarsal or tarsometrtarsal joint, each	6.0	90	3.0
28072	metatarsophalangeal joint, each	3.6	90	3.0
28080	Excision of Morton neuroma, single, each	3.6	30	3.0
28086	Synovectomy, tendon sheath; flexor	6.0	90	3.0
28088	extensor	6.0	90	3.0
28090	Excision of lesion of tendon or fibrous sheath or capsule (including synovectomy) (cyst or ganglion); foot	3.6	30	3.0
28092	toes	2.4	30	3.0
28100	Excision or curettage of bone cyst or benign tumor, talus or calcaneus;	6.0	60	3.0
28102	with iliac or other autogenous bone graft (includes obtaining graft)	7.0	120	3.0
28103	with homogenous bone graft	8.0	120	3.0
28104	Excision or curettage of bone cyst or benign tumor, tarsal or metatarsal bones, except talus or calcaneus;	4.8	60	3.0
28106	with iliac or other autogenous bone graft (includes obtaining graft)	5.6	120	3.0
28107	with homogenous bone graft	6.6	120	3.0
28108	Excision or curettage of bone cyst or benign tumor, phalanges;	3.6	60	3.0
28109	with homogenous bone graft	4.6	60	3.0
	(For ostectomy, partial (e.g., hallux valgus, Silver type procedure) see 28290)			
28110	Ostectomy, partial excision, fifth metatarsal head (bunionette) (separate procedure)	2.4	60	3.0
28111	Ostectomy; complete excision of first metatarsal head	7.0	90	3.0
28112	other metatarsal head (second, third or fourth)	4.0	60	3.0
28113	fifth metatarsal head	1.0	90	3.0
28114	all metatarsal heads with partial proximal phalangectomies (Clayton type procedure)	12.0	60	3.0
28116	Ostectomy, excision of tarsal coalition	7.0	60	3.0
28118	Ostectomy, calcaneus; partial (Cotton scoop type procedure)	7.0	60	3.0
28119	for spur, with or without plantar fascial release	BR		3.0
28120	Partial excision of bone (craterization, saucerization, sequestrectomy, or diaphysectomy) for osteomyelitis, talus or calcaneus;	6.0	60	3.0
28121	with suction irrigation	7.0	60	3.0
28122	Partial excision of bone (craterization, saucerization or diaphysectomy) for osteomyelitis, tarsal or metatarsal bone, except talus or calcaneus;	4.8	60	3.0
28123	with suction irrigation	5.0	60	3.0
28124	Partial excision of bone (craterization, saucerization, or diaphysectomy) for osteomyelitis, phalanx	3.6	60	3.0
28126	Condylectomy, phalangeal base, single toe, each	8.0	60	3.0
28130	Talectomy (astragalectomy)	10.0	120	3.0
28135	Calcanectomy	10.0	120	3.0
28140	Metatarsectomy	6.0	60	3.0
28150	Phalangectomy, single, each	3.6	30	3.0
28153	Resection, head of phalanx	6.0	30	3.0
28160	Hemiphalangectomy or interphalangeal joint excision, single, each	3.0	30	3.0
28171	Radical resection for tumor; tarsal (except talus or calcaneus)	BR		3.0
28173	metatarsal	BR		3.0
28175	phalanx	BR		3.0
	(For talus or calcaneous, see 27647)			

		Unit Value	Follow–up Days=	Basic Anes@
	INTRODUCTION AND/OR REMOVAL			
	(For arthrocenteses (injections or aspiration), see 20600, 20605)			
	(For K wire or pin insertion or removal, see 20650, 20670)			
28190	*Remove foreign body; subcutaneous	BR		3.0
28192	deep	BR		3.0
28193	complicated	BR		3.0
	REPAIR, REVISION OR RECONSTRUCTION			
28200	Repair or suture of tendon, foot, flexor, single; primary or secondary, without free graft, each tendon	6.0	90	3.0
28202	secondary with free graft, each tendon (includes obtaining graft)	8.0	90	3.0
28208	Repair or suture of tendon, foot, extensor, single; primary or secondary, each tendon	2.8	90	3.0
28210	secondary with free graft, each tendon (includes obtaining graft)	4.4	90	3.0
28220	Tenolysis, flexor, single	5.0	60	3.0
28222	multiple (through same incision), each	6.0	60	3.0
28225	Tenolysis, extensor; single	2.8	60	3.0
28226	multiple (through same incision), each	3.6	60	3.0
28230	Tenotomy, open, flexor, foot, single or multiple (separate procedure)	3.0	30	3.0
28232	toe, single (separate procedure)	1.4	30	3.0
28234	Tenotomy, open, extensor, foot or toe	1.0	30	3.0
28236	Transfer of tendon, anterior tibial into tarsal bone (e.g., Lowman–Young type procedure)	5.0	120	3.0
28238	Advancement of posterior tibial tendon with excision of accessory navicular bone (Kidner type procedure)	7.0	120	3.0
	(For subcutaneous tenotomy, see 28010, 28011)			
	(For transfer or transplant of tendon with muscle redirection or rerouting, see 27690–27692)			
	(For extensor hallucis longus transfer, great toe, IP fusion, see 28760)			
28240	Tenotomy or release, abductor hallucis muscle (McCauley type procedure)	3.6	60	3.0
28250	Division of plantar fascia and muscle ("Steindler stripping") (separate procedure)	6.0	60	3.0
28260	Capsulotomy, midfoot; medial release only (separate procedure)	BR		3.0
28261	with tendon lengthening	BR		3.0
28262	extensive, including posterior talotibial capsulotomy and tendon(s) lengthening as for resistant clubfoot deformity	BR		3.0
28264	Capsulotomy, midtarsal (Heyman type procedure)	12.0	90	3.0
28270	Capsulotomy for contracture, metatarsophalangeal joint, with or without tenorrhaphy, single, each joint (separate procedure)	3.0	60	3.0
28272	interphalangeal joint, single, each joint (separate procedure)	1.4	60	3.0
28280	Webbing operation (create syndactylism of toes) for soft corn (Kelikian type procedure)	3.6	46	3.0
28285	Hammer toe operation, one toe (e.g., interphalangeal fusion, filleting, phalangectomy) (separate procedure)	4.8	90	3.0
28286	for cock–up fifth toe with plastic skin closure, (Ruiz–Mora type procedure)	3.6	120	3.0
28288	Ostectomy, partial, exostectomy or condylectomy, single, metatarsal head, second through fifth, each metatarsal head, (separate procedure)	7.0	120	3.0
28290	Hallux valgus (bunion) correction, with or without sesamoidectomy; simple exostectomy (Silver type procedure)	4.8	60	3.0
28292	Keller, McBride or Mayo type procedure	7.0	90	3.0
28293	resection of joint with implant	8.0	120	3.0
28294	with tendon transplants (Joplin type procedure)	9.5	90	3.0
28296	with metatarsal osteotomy (Mitchell or Lapidus type procedure)	9.5	120	3.0
28298	Hallux valgus (bunion) correction; by phalanx osteotomy	7.0	120	3.0
28299	by other methods (e.g., double osteotomy)	BR		3.0
28300	Osteotomy; calcaneus (Dwyer or Chambers type procedure) with or without internal fixation	9.5	90	3.0
28302	talus	9.0	90	3.0
28304	Osteotomy, midtarsal bones, other than calcaneus or talus;	8.0	90	3.0
28305	with autogenous graft (includes obtaining graft) (Fowler type)	9.0	120	3.0
28306	Osteotomy, metatarsal, base or shaft, single, for shortening or angular correction; first metatarsal	7.0	90	3.0
28308	other than first metatarsal	5.6	90	3.0
28309	Osteotomy, metatarsals, multiple, for cavus foot (Swanson type procedure)	BR	120	3.0
28310	Osteotomy for shortening, angular or rotational correction; proximal phalanx, first toe (separate procedure)	2.8	90	3.0
28312	other phalanges, any toe	2.0	90	3.0
28315	Sesamoidectomy, first toe (separate procedure)	BR		3.0
28320	Repair of nonunion or malunion; tarsal bones (calcaneus, talus, etc.)	BR		3.0
28322	metatarsal, with or without bone graft (includes obtaining graft)	4.8	120	3.0
	FRACTURE AND/OR DISLOCATION			
28400	Treatment of closed calcaneal fracture; without manipulation	Sv.&		
28405	with manipulation including Cotton or Bohler type reductions	BR		3.0
28406	with manipulation and skeletal			

		Unit Value	Follow-up Days=	Basic Anes@
	fixation	BR	120	3.0
28410	Treatment of open calcaneal fracture, with uncomplicated soft tissue closure	4.0	90	3.0
28415	Open treatment of closed or open calcaneal fracture, with or without internal or external skeletal fixation	10.0	90	3.0
28420	with primary iliac or other autogenous bone graft (includes obtaining graft)	14.5	90	3.0
28430	Treatment of closed talus fracture; without manipulation	Sv.&		
28435	with manipulation	3.0	90	3.0
28440	Treatment of open talus fracture, with uncomplicated soft tissue closure	4.0	90	3.0
28445	Open treatment of closed or open talus fracture, with or without internal or skeletal fixation	10.0	90	3.0
28450	Treatment of closed tarsal bone fracture (except talus and calcaneous); without manipulation, each	Sv.&		
28455	with manipulation, each	2.0	90	3.0
28460	Treatment of open tarsal bone fracture (except talus and calcaneus), with uncomplicated soft tissue closure, each	3.0	90	3.0
28465	Open treatment of closed or open tarsal bone fracture (except talus and calcaneus), with or without internal or external skeletal fixation, each	6.0	90	3.0
28470	Treatment of closed metatarsal fracture; without manipulation, each	Sv.&		
28475	with manipulation, each	2.2	90	3.0
28480	Treatment of open metatarsal fracture, with uncomplicated soft tissue closure, each	3.0	90	3.0
28485	Open treatment of closed or open metatarsal fracture, with or without internal or external skeletal fixation, each	6.0	90	3.0
28490	Treatment of closed fracture great toe, phalanx or phalanges; without manipulation	Sv.&		
28495	with manipulation	1.2	30	3.0
28500	Treatment of open fracture great toe, phalanx or phalanges, with uncomplicated soft tissue closure	1.8	30	3.0
28505	Open treatment of closed or open fracture great toe, phalanx or phalanges, with or without internal or external skeletal fixation	3.6	45	3.0
28510	Treatment of closed fracture, phalanx or phalanges, other than great toe; without manipulation, each	Sv.&		
28515	with manipulation, each	1.0	30	3.0
28520	Treatment of open fracture, phalanx or phalanges, other than great toe, with uncomplicated soft tissue closure, each	1.6	30	3.0
28525	Open treatment of closed or open fracture, phalanx or phalanges; other than great toe, with or without internal or external skeletal fixation, each	3.0	45	3.0
*28540	Treatment of closed tarsal bone dislocation; without anesthesia	*0.72	0	
28545	requiring anesthesia	2.0	45	3.0
28546	Treatment of closed tarsal bone dislocation, with percutaneous skeletal fixation	2.8		
28550	Treatment of open tarsal bone dislocation, with uncomplicated soft tissue closure	2.8	45	3.0
28555	Open treatment of closed or open tarsal bone dislocation, with or without internal or external skeletal fixation	6.0	90	3.0
*28570	Treatment of closed talotarsal joint dislocation; without anesthesia	*1.0	0	
28575	requiring anesthesia	2.4	45	3.0
28580	Treatment of open talotarsal joint dislocation, with uncomplicated soft tissue closure	3.2	45	3.0
28585	Open treatment of closed or open talotarsal joint dislocation, with or without internal or external skeletal fixation	10.0	90	3.0
*28600	Treatment of closed tarsometrtarsal [tarsometatarsal] joint dislocation, without anesthesia	*0.72	0	
28605	requiring anesthesia	2.0	45	3.0
28606	Treatment of closed tarsometrtarsal [tarsometatarsal] joint dislocation, with percutaneous skeletal fixation	3.0		3.0
28610	Treatment of open tarsometrtarsal [tarsometatarsal] joint dislocation, with uncomplicated soft tissue closure	2.8	45	3.0
28615	Open treatment of closed or open tarsometrtarsal [tarsometatarsal] joint dislocation, with or without internal or external skeletal fixation	6.0	90	3.0
*28630	Treatment of closed metatarsophalangeal joint dislocation; without anesthesia	*0.72	0	
28635	requiring anesthesia	1.4	45	3.0
28640	Treatment of open metatarsophalangeal joint dislocation, with uncomplicated soft tissue closure	2.0	45	3.0
28645	Open treatment of closed or open metatarsophalangeal joint dislocation	4.0	90	3.0
*28660	Treatment of closed interphalangeal joint dislocation; without anesthesia	*0.72	0	
28665	requiring anesthesia	1.2	45	3.0
28670	Treatment of open interphalangeal joint dislocation, with uncomplicated soft tissue closure	1.6	45	3.0
28675	Open treatment of closed or open interphalangeal joint dislocation	2.4	60	3.0
	ARTHRODESIS			
28705	Pantalar arthrodesis	19.0	120	3.0
28715	Triple arthrodesis	15.0	120	3.0
28725	Subtalar arthrodesis (includes Grice type procedure)	12.0	120	3.0
28730	Arthrodesis, midtarsal or tarsometrtarsal [tarsometatarsal], multiple or transverse;	11.0	120	3.0
28735	with osteotomy as for flat foot correction	14.0	120	3.0
28737	Arthrodesis, midtarsal navicular-cuneiform, with tendon lengthening and advancement (Miller type			

		Unit Value	Follow-up Days=	Basic Anes@
	procedure)	7.0	120	3.0
28740	Arthrodesis, midtarsal or tarsometrtarsal, single joint	9.0	120	3.0
28750	Arthrodesis, great toe; metatarsophalangeal joint	7.0	120	3.0
28755	interphalangeal joint	4.0	120	3.0
28760	Arthrodesis, great toe, interphalangeal joint, with extensor hallucis longus transfer to first metatarsal neck (Jones type procedure)	6.0	120	3.0
	(For hammertoe operation or interphalangeal fusion, see 28285)			
AMPUTATION				
28800	Amputation, foot; midtarsal (Chopart type procedure)	10.0	90	3.0
28805	transmetatarsal	10.0	90	3.0
28810	Amputation, metatarsal, with toe, single	6.0	90	3.0
28820	Amputation, toe; metatarsophalangeal joint	3.0	45	3.0
28825	interphalangeal joint	2.0	45	3.0
MISCELLANEOUS				
28899	Unlisted procedure, foot or toes	BR		3.0
	(For skin grafts and flaps, see 15050–15770)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-091, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-091, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-091, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-091, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-091, filed 1/30/74.]

WAC 296-22-095 Application of casts and strapping.

The listed procedures apply when the cast application or strapping is a replacement procedure used during or after the period of follow-up care. Additional visits are reportable only if significant identifiable further services are provided at the time of the cast application or strapping.

Listed procedures include removal of cast or strapping.

		Unit Value	Follow-up Days=	Basic Anes@
BODY AND UPPER EXTREMITY CASTS				
29000	Application of halo type body cast (see 20661–20663 for insertion)	5.0	2	3.0
29010	Application of Risser jacket, localizer, body; only	3.0	2	3.0
29015	including head	3.6	2	3.0
29020	Application of turnbuckle jacket, body; only	3.0	2	3.0
29025	including head	3.6	2	3.0
29035	Application of body cast, shoulder to hips;	1.6	2	3.0
29040	including head, Minerva type	2.2	2	3.0
29044	including one thigh	2.0	2	3.0
29046	including both thighs	2.2	2	3.0
29049	Application; plaster figure of eight	0.6	2	3.0
29055	shoulder spica	1.8	2	3.0
29058	plaster Velpeau	0.8	2	3.0
29065	shoulder to hand (long arm)	0.8	2	3.0
29075	elbow to fingers (short arm)	0.6	2	3.0
29085	hand and lower forearm (gauntlet)	0.6	2	3.0
SPLINTS				
29105	Application of long arm splint (shoulder to hand)	0.6	2	3.0
29125	Application of short arm (forearm and hand); static	0.5	2	3.0
29126	dynamic	0.8	2	3.0
29130	Application of finger splint; static	0.3	2	3.0
29131	dynamic	0.4	2	3.0
STRAPPING—ANY AGE				
29200	Strapping; thorax	0.4	0	
29220	low back	0.5	0	
29240	shoulder (eg, Velpeau)	0.6	0	
29260	elbow or wrist	0.24	0	
29280	hand or finger	0.2	0	
LOWER EXTREMITY CASTS				
29305	Application of hip spica cast; unilateral	2.0	2	3.0
29325	bilateral, or one and one-half spica	2.4	2	3.0
	(For hip spica (body) cast, including thighs only, see 29046)			
29345	Application of long leg cast (thigh to toes);	1.1	2	3.0
29355	walking or ambulatory type	1.3	2	3.0
29358	Application of long leg cast brace	BR		
29365	Application of cylinder cast (thigh to ankle)	1.0	2	3.0
29405	Application of short leg (below knee to toes);	0.8	2	3.0
29425	walking or ambulatory type	1.0	2	3.0
29435	Application of patellar tendon bearing (PTB) cast	1.2	2	3.0
29440	Adding walker to previously applied cast	0.3		
29450	Application of clubfoot cast with molding or manipulation, long or short leg; unilateral	0.4	2	3.0
29455	bilateral	0.8	2	3.0
	(If over age 24 months, see other lower extremity casts)			
SPLINTS				
29505	Application of long leg splint (thigh to ankle or toes)	0.72	2	3.0
29515	Application of short leg splint (calf to foot)	0.6	2	3.0
STRAPPING—ANY AGE				
29520	Strapping; hip	0.5	0	
29530	Knee	0.4	0	
29540	Ankle	0.3	0	
29550	toes	0.3	0	
29580	Unna Boot	0.4	0	
29590	Denis-Browne splint strapping	0.4	0	

		Unit Value	Follow-up Days=	Basic Anes@
REMOVAL OR REPAIR				
	(Codes for cast removals should be employed only for casts applied by another physician)			
29700	Removal or bivalving; gauntlet, boot or body cast	0.4	0	
29705	full arm or full leg cast	0.4		
29710	shoulder or hip spica, Minerva or Risser jacket, etc.	0.5	0	
29715	turnbuckle jacket	0.7	0	
29720	Repair of spica, body cast or jacket	0.24	0	
29730	Windowing of cast	0.24	0	
29740	Wedging of cast (except clubfoot casts)	0.3	0	
29750	Wedging of clubfoot cast; unilateral	0.3	0	
29751	bilateral	0.4	0	
MISCELLANEOUS				
29799	Unlisted procedure, casting or strapping	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-095, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-095, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-095, filed 1/30/74.]

RESPIRATORY SYSTEM

WAC 296-22-100 Nose respiratory system.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
	(For simple furuncle, see 10020)			
*30000	Drainage abscess or hematoma, nasal, internal approach	*1.2	0	3.0
	(For external approach, see 10020, 10060, 10140)			
*30020	Drainage of abscess or hematoma, nasal septum	*1.4	0	3.0
	(For lateral rhinotomy, see specific application, e.g., 30118, 30320)			
EXCISION				
	(For excision of nasopharyngeal fibroma, see 42880)			
	(For biopsy of nasopharynx, see 42804)			
30100	Biopsy, intranasal	0.6	7	3.0
	(For biopsy skin of nose, see 11100, 11101)			
30110	Excision of nasal polyp(s) simple; unilateral	1.4	15	3.0
30111	bilateral	BR		3.0
	(30110, 30111 would normally be completed in an office setting)			
30115	Excision, nasal polyp(s), extensive; unilateral	4.0	30	3.0
30116	bilateral	BR		3.0
	(30115, 30116 would normally require the facilities available in a hospital setting)			
30117	Excision, intranasal lesion; internal approach	BR		
30118	external approach (lateral rhinotomy)	BR		
30120	Excision or surgical planing of skin of nose for rhinophyma	10.0	60	3.0
30124	Excision dermoid cyst, nose; simple, skin, subcutaneous	2.5	0	4.0
30125	complex, under bone or cartilage	BR	30	4.0
30130	Excision turbinate, partial or complete	2.0	30	3.0
30140	Submucous resection turbinate, partial or complete	6.0	90	3.0
	(For submucous resection of nasal septum, see 30500)			
30150	Rhinectomy; partial	BR		3.0
30160	total	BR		3.0
	(For closure and/or reconstruction, primary or delayed, see integumentary System, 13150-13152, 14060-14300, 15120-15730, 15760, 20900-20910)			
INTRODUCTION				
*30200	Injection into turbinate(s), therapeutic	*0.48	0	
30210*	Displacement therapy (Proetz type)	0.2	0	4.0
30220	Insertion, nasal septal prosthesis (button)	BR		4.0
REMOVAL FOREIGN BODY				
*30300	Removal foreign body; internasal; office type procedure	*0.4	0	3.0
30310	requiring general anesthesia	2.0	7	3.0
30320	by lateral rhinotomy	BR		3.0
REPAIR				
	(For obtaining tissues for graft, see 20900-20926, 21210)			
	(See also repair-complex, 13000-15760 and 21210-21235)			
30400	Rhinoplasty, primary, lateral and alar cartilages and/or elevation of nasal tip	12.0	180	3.0
	(For columellar reconstruction, see 13150 et seq.)			
30410	complete, external parts including bony pyramid, lateral and alar cartilages, and/or elevation of nasal tip	18.0	180	3.0
30420	including major septal repair	20.0	180	3.0
30430	Rhinoplasty, secondary; minor revision (small amount of nasal tip work)	3.0	45	3.0
30435	intermediate revision (bony work with osteotomies)	BR	45	3.0
30450	major revision (nasal tip work and osteotomies)	BR		4.0
30500	Submucous resection nasal septum, classic	8.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For submucous resection of turbinates, see 30140)			
30520	Septoplasty with or without cartilage implant, (separate procedure)	10.0	90	3.0
30540	Repair choanal atresia; intranasal	11.0	60	3.0
30545	transpalatine	20.0	365	3.0
*30560	Lysis intranasal synechia	*0.4	0	3.0
30580	Repair fistula; oromaxillary (combine with 31030 if antrotomy is included)	10.0	90	3.0
30600	oronasal	BR+		3.0
30620	Reconstruction, functional, internal nose (septal or other septal dermatoplasty) (does not include obtaining graft)	10.0	90	3.0
30630	Repair nasal septal perforations	BR		3.0
DESTRUCTION				
*30800	Cauterization turbinates, unilateral or bilateral (separate procedure); superficial	*0.4	0	3.0
30805	intramural	1.4	7	3.0
30820	Cryosurgery of turbinates, unilateral or bilateral	BR		3.0
OTHER PROCEDURES				
	(30900 Control of anterior nasal hemorrhage has been expanded into 30901–30904)			
*30901	Control nasal hemorrhage, anterior, simple (cauterization); unilateral	*0.6	0	
*30902	bilateral	*0.8		0
*30903	Control nasal hemorrhage, anterior, complex (cauterization); unilateral	BR		
*30904	bilateral	BR		
*30905	Control nasal hemorrhage, posterior, with posterior nasal packs; initial	*2.4	0	3.0
*30906	subsequent	*1.6	0	3.0
30915	Ligation, arteries, ethmoidal	10.0	30	3.0
30920	internal maxillary artery, transantral	BR		3.0
	(For ligation external carotid artery, see 37600)			
30930	Fracture nasal turbinate(s) therapeutic	BR		3.0
30999	Unlisted procedure, nose	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-100, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-100, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-100, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-100, filed 1/30/74; Order 68-7, § 296-22-100, filed 11/27/68, effective 1/1/69.]

WAC 296-22-105 Accessory sinuses.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*31000	Lavage by cannulation; maxillary sinus, unilateral (antrum puncture or natural ostium)	*0.4	0	3.0
*31001	maxillary sinuses, bilateral	*0.6	0	3.0
31002*	sphenoid sinus	0.8	0	3.0
31020	Sinusotomy, maxillary (antrotomy); intranasal, unilateral	3.0	90	3.0
31021	intranasal, bilateral	6.0	90	3.0
31030	radical, unilateral (Caldwell-Luc) without removal of antrochoanal polyps	10.0	90	3.0
31031	radical, bilateral (Caldwell-Luc) without removal of antrochoanal polyps	12.0	90	3.0
31032	radical unilateral (Caldwell-Luc) with removal of antrochoanal polyps	11.0	3.0	
31033	radical, bilateral (Caldwell-Luc) with removal of antrochoanal polyps	16.0	3.0	
31040	Surgery on pterygomaxillary fossa contents by transantral approach	BR		3.0
	(For transantral ligation of internal maxillary artery, see 30920)			
31050	Sinusotomy, sphenoid	11.0	30	3.0
31070	Sinusotomy, frontal; external, simple (trephine operation)	10.0	30	3.0
31075	transorbital, unilateral (for mucocele or osteoma, Lynch type)	16.0	180	3.0
31080	obliterative without osteoplastic flap, brow incision (includes ablation)	24.0	180	3.0
31081	obliterative, without osteoplastic flap, coronal incision (includes ablation)	BR		3.0
31084	obliterative, with osteoplastic flap, brow incision	BR		3.0
31085	obliterative, with osteoplastic flap, coronal incision	BR		3.0
31086	nonobliterative, with osteoplastic flap, brow incision	BR		3.0
31087	nonobliterative, with osteoplastic flap, coronal incision	BR		3.0
31090	Sinusotomy combined, three or more sinuses	26.0	180	3.0
EXCISION				
31200	Ethmoidectomy; intranasal, anterior	6.0	90	3.0
31201	intranasal, total	10.0	90	3.0
31205	extranasal total	13.0	90	3.0
31225	Maxillectomy; without orbital exenteration	24.0	180	3.0
31230	with orbital exenteration (en bloc)	24.0	180	3.0
	(For orbital exenteration as an independent procedure, see 65110 et seq.)			
	(For skin grafts, see 15120 et seq.)			

		Unit Value	Follow-up Days=	Basic Anes@
OTHER PROCEDURES				
	(For hypophysectomy, transnasal or transeptal approach, see 61548)			
	(For transcranial hypophysectomy, see 61546)			
	(31245 has been deleted. For transnasal excision of pituitary tumor, see 61548)			
31299	Unlisted procedure, accessory sinuses	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-105, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-105, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-105, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-105, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-105, filed 1/30/74; Order 68-7, § 296-22-105, filed 11/27/68, effective 1/1/69.]

WAC 296-22-110 Larynx.

		Unit Value	Follow-up Days=	Basic Anes@
EXCISION				
31300	Laryngotomy (thyrotomy, laryngofissure); with removal of tumor or laryngocele, cordectomy	16.0	90	6.0
31320	diagnostic	8.0	60	6.0
31360	Laryngectomy; total, without radical neck dissection	26.0	180	6.0
31365	total, with radical neck dissection	34.0	180	6.0
31367	subtotal supraglottic, without radical neck dissection	30.0	180	6.0
31368	subtotal supraglottic, with radical neck dissection	30.0	180	6.0
31370	Partial laryngectomy (hemilaryngectomy); horizontal	30.0	180	6.0
31375	laterovertical	20.0	180	6.0
31380	anterovertical	20.0	180	6.0
31382	antero-latero-vertical	20.0	180	6.0
31390	Pharyngolaryngectomy, with radical neck dissection; without reconstruction	BR		6.0
31395	with reconstruction	BR		6.0
31400	Arytenoidectomy or arytenoidopexy, external approach	20.0	180	6.0
	(For endoscopic arytenoidectomy, see 31560)			
31420	Epiglottidectomy	16.0	180	6.0
INTRODUCTION				
31500	Intubation, endotracheal, emergency procedure	1.4	0	
	(For injection procedure for bronchography, see 31656, 31708, 31710)			
ENDOSCOPY				
31505	Laryngoscopy, indirect (separate procedure); diagnostic	BR		
31510	with biopsy	BR		
31511	with removal of foreign body	BR		
31512	with removal of lesion	BR		
31513	with vocal cord injection	BR		
31515	Laryngoscopy, direct; for aspiration	0.6	0	
31520	diagnostic, newborn	2.4	7	4.0
31525	diagnostic, except newborn	4.0	7	4.0
31526	diagnostic, with operating microscope	BR		4.0
31527	with insertion of obturator	BR		4.0
31528	with dilatation, initial	BR		4.0
31529	with dilatation, subsequent	BR		4.0
31530	Laryngoscopy, operative, with foreign body removal;	6.0	30	4.0
31531	with operating microscope	BR		4.0
31535	Laryngoscopy, operative, with biopsy;	6.0	30	4.0
31536	with operating microscope	BR		
31540	Laryngoscopy, operative, with excision of tumor and/or stripping of vocal cords or epiglottis;	6.0	90	4.0
31541	with operating microscope	BR		4.0
31560	Laryngoscopy, operative, with arytenoidectomy;	15.0	90	4.0
31561	with operating microscope	BR		
31570	Laryngoscopy with injection into vocal cord(s), therapeutic;	6.0	90	4.0
31571	with operating microscope	BR		4.0
31575	Laryngoscopy, flexible fiberscopic, diagnostic	BR	90	4.0
31576	with biopsy	BR	90	4.0
31577	with removal of foreign body	BR	90	4.0
31578	with removal of lesion	BR	90	4.0
REPAIR				
31580	Laryngoplasty; for laryngeal web, two stage, with keel insertion and removal	BR		4.0
31582	for laryngeal stenosis, with graft or core mold, including tracheotomy	BR		4.0
31584	with open reduction of fracture	BR		4.0
31585	Treatment of closed laryngeal fracture; without manipulation	BR		4.0
31586	with closed manipulative reduction	BR		4.0
31590	Laryngeal reinnervation by neuromuscular pedicle	BR	90	4.0
DESTRUCTION				
31595	Section recurrent laryngeal nerve, therapeutic (separate procedure), unilateral	BR	90	4.0
OTHER PROCEDURES				
31599	Unlisted procedure, larynx	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-110, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-110, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-110, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-110, filed 1/30/74; Order 68-7, § 296-22-110, filed 11/27/68, effective 1/1/69.]

WAC 296-22-115 Trachea and bronchi.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
31600	Tracheostomy, planned (separate procedure);	5.4	15	5.0
31601	under two years	6.0	15	6.0
31603	Tracheostomy, emergency procedure, transtracheal	BR	90	5.0
31605	Cricothyroid membrane	BR		4.0
31610	Tracheostomy, fenestration procedure with skin flaps	7.0	15	4.0
	(For endotracheal intubation, see 31500)			
	(For tracheal aspiration under direct vision, see 31515)			
31612	Tracheal puncture, percutaneous for aspiration of mucus (transtracheal aspiration)	BR		4.0
31613	Tracheostoma revision; simple, without flap rotation	BR	30	5.0
31614	complex, with flap rotation	BR	30	5.0
ENDOSCOPY				
31615	Tracheoscopy through established tracheostomy incision	BR		4.0
31620	Bronchoscopy; diagnostic, rigid bronchoscope	3.6	30	4.0
31621	diagnostic, fiberoptic bronchoscope (flexible)	3.6	7	5.0
31625	with biopsy, rigid bronchoscope	5.0	30	4.0
31626	with biopsy, fiberoptic bronchoscope (flexible)	5.0	7	5.0
31627	with brushing, fiberoptic bronchoscope (flexible)	5.0	7	5.0
31628	with transbronchial lung biopsy, fiberoptic bronchoscope (flexible) under fluoroscopic guidance	BR		5.0
31630	with tracheal or broncheal dilation or closed reduction of fracture	6.0	30	6.0
31635	with removal of foreign body	5.6	30	4.0
31640	with excision of tumor	5.0	30	4.0
31645	with therapeutic aspiration of tracheo-bronchial tree, initial	4.0	30	4.0
31646	with therapeutic aspiration of tracheobronchial tree, subsequent	2.6	30	4.0
	(For catheter aspiration of tracheobronchial tree at bedside, see 31725)			
31650	with drainage of lung abscess or cavity, initial	4.0	30	4.0
31651	with drainage of lung abscess or cavity, subsequent	2.6	30	4.0
31656	with injection of contrast material for segmental bronchography (fiberscope only)	4.0	30	4.0
31659	with other bronchoscopic procedures	BR		4.0
INTRODUCTION				
	(For endotracheal intubation, see 31500)			
	(For tracheal aspiration under direct vision, see 31515)			
31700	Catheterization transglottic (separate procedure)	3.6	0	
31708	Instillation of contrast material for laryngography or bronchography, without catheterization	0.9	0	
31710	Catheterization for bronchography, with or without instillation of contrast material	0.8	0	
	(For bronchoscopic catheterization for bronchography, fiberscope only, see 31656)			
31715	Transtracheal injection for bronchography	0.8	0	
	(For detention time, see 99150, 99151)			
31717	Catheterization with bronchial brush biopsy	BR		
31719	Transtracheal (percutaneous) introduction of indwelling tube for therapy (tickle tube)	BR		
31720	Catheter aspiration (separate procedure); nasotracheobronchial	0.8	0	
31725	tracheobronchial with fiberscope, bedside	1.0	0	
REPAIR				
31750	Tracheoplasty; cervical	BR		6.0
31755	tracheopharyngeal fistulization (Asai technique), each stage	BR		6.0
31760	intrathoracic	BR		12.0
31770	Bronchoplasty; graft repair	BR		11.0
31775	excision stenosis and anastomosis	BR		11.0
	(For lobectomy and bronchoplasty, see 32485)			
31780	Excision tracheal stenosis and anastomosis; cervical	BR		11.0
31781	cervicothoracic	BR		11.0
31785	Excision of tracheal tumor or carcinoma; cervical	BR		11.0
31786	thoracic	BR		11.0
SUTURE				
31800	Suture of external tracheal wound or injury; cervical	BR		6.0
31805	intrathoracic	BR		12.0
31820	Surgical closure tracheostomy or fistula; without plastic repair	4.0	30	4.0
31825	with plastic repair	6.0	30	4.0
	(For repair of tracheoesophageal fistula, see 43305-43312)			
31830	Revision of tracheostomy scar	5.60	30	4.0
31899	Unlisted procedure, trachea, bronchi	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-115, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-115, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-115, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-115, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-115, filed 1/30/74; Order 68-7, § 296-22-115, filed 11/27/68, effective 1/1/69.]

WAC 296-22-116 Lungs and pleura.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*32000	Thoracentesis, puncture of pleural cavity for aspiration, initial or subsequent	*0.72	0	
32005	Chemical pleurodesis (e.g., for recurrent or persistent pneumothorax)	BR		
*32020	Tube thoracostomy with water seal(e.g., pneumothorax, hemothorax, empyema) (separate procedure)	*1.2	0	
32035	Thoracostomy; with rib resection for empyema	6.0	60	3.0
32036	with open flap drainage for empyema	8.0	90	3.0
32095	Thoracotomy limited, for biopsy of lung or pleura	BR		3.0
32100	Thoracotomy, major; with exploration and biopsy	12.0	90	11.0
32110	with control of traumatic hemorrhage and/or repair of lung tear	16.0	90	11.0
32120	for postoperative complications	16.0	90	11.0
32124	with open intrapleural pneumonolysis	16.0	90	11.0
32140	with cyst(s) removal with or without a pleural procedure	16.0	90	11.0
32141	with excision–plication of bullae, with or without any pleural procedure	20.0	90	11.0
32150	with removal of intrapleural foreign body or fibrin deposit	14.0	90	11.0
32151	with removal of intrapulmonary foreign body	16.0	90	11.0
32160	with cardiac massage	BR		12.0
	(For segmental or other resections of lung, see 32480–32525)			
32200	Pneumonostomy, with open drainage of abscess or cyst	14.0	120	11.0
32215	Pleural scarification for repeat pneumothorax	16.0	90	11.0
32220	Decortication, pulmonary, (separate procedure); total	20.0	90	11.0
32225	partial	14.0	90	11.0
	EXCISION			
32310	Pleurectomy; parietal (separate procedure)	20.0	90	11.0
32315	partial	15.0	90	11.0
32320	Decortication and parietal pleurectomy	28.0	90	11.0
32400	Biopsy, pleura; percutaneous needle	1.2	7	
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
32402	open	6.0	15	3.0
32405	Biopsy, lung, percutaneous needle	3.0	7	3.0
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
*32420	Pneumonocentesis, puncture of lung for aspiration	*1.2	0	
32440	Pneumonectomy, total	30.0	90	11.0
32445	Pneumonectomy, extrapleural; without empyemectomy	20.0	90	11.0
32450	with empyemectomy	25.0	90	11.0
32480	Lobectomy, total or segmental;	26.0	90	11.0
32485	with bronchoplasty	30.0	90	11.0
32490	with concomitant decortication	30.0	90	11.0
32500	Wedge resection, of lung; single or multiple	22.0	90	11.0
32520	Resection of lung; with resection of chest wall	30.0	90	11.0
32522	with reconstruction of chest wall, without prosthesis	32.0	90	11.0
32525	with major reconstruction of chest wall, with prosthesis	35.0	90	11.0
32540	Extrapleural enucleation of empyema (empyemectomy);	20.0	90	11.0
32545	with lobectomy	30.0	90	11.0
	ENDOSCOPY			
32700	Thoracoscopy, exploratory (separate procedure);	4.0	30	4.0
32705	with biopsy	4.0	30	4.0
	REPAIR			
32800	Repair lung hernia through chest wall	BR		11.0
32810	Closure of chest wall following open flap drainage for empyema (Clagett type procedure)	BR		11.0
32815	Open closure of major bronchial fistula	BR		11.0
32820	Major reconstruction, chest wall (post–traumatic)	BR		11.0
	SURGICAL COLLAPSE THERAPY; THORACOPLASTY			
	(See also 32520)			
32900	Resection of ribs, extrapleural, all stages	14.0	90	9.0
32905	Thoracoplasty, Schede type or extrapleural (all stages);	14.0	90	9.0
32906	with closure of bronchopleural fistula	16.0	90	9.0
	(For open closure of major bronchial fistula, see 32815)			
	(For resection of first rib for thoracic outlet compression, see 21615, 21616)			
32940	Pneumonolysis, extraperiosteal, including filling or packing procedures	14.0	90	9.0
*32960	Pneumothorax; therapeutic, intrapleural injection of air	*1.0	0	
32999	Unlisted procedure, lungs and pleura	BR		9.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-116, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-116, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-116, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-116, filed 1/30/74; Order 68-7, § 296-22-116, filed 11/27/68, effective 1/1/69.]

CARDIOVASCULAR SYSTEM

The listed values are for the principal surgeon only. For concurrent services of other physicians (e.g., team surgery, co-surgeon), see WAC 296-22-010, item 5 and appropriate unit value modifiers.

(For monitoring, operation of pump and other non-surgical services, see 90900-90930)

(For procedures listed "with bypass" (heart pump oxygenator or pump assist), see Anesthesia modifier -45.)

(For medical or laboratory related services, see appropriate section.)

WAC 296-22-120 Heart and pericardium.

		Unit Value	Follow-up Days=	Basic Anes@
	(For monitoring, operation of pump and other nonsurgical services, see 99150, 99151, 99160-99162, 99190-99192)			
	(For other medical or laboratory related services, see appropriate section)			
PERICARDIUM				
33010*	Pericardiocentesis; initial	1.2	0	
33011*	subsequent	1.0	0	
33015	Tube pericardiostomy	BR		
33020	Pericardiostomy for removal of clot or foreign body (primary procedure)	20.0	90	13.0
33025	Creation of pericardial window or partial resection for drainage	20.0	15	15.0
33030	Partial resection for chronic constrictive pericarditis, without bypass	30.0	90	15.0
33035	Complete ventricular decortication, with cardiopulmonary bypass	40.0	90	15.0
33050	Excision of pericardial cyst or tumor	20.0	90	13.0
33100	Pericardiectomy (separate procedure)	34.0	90	15.0
CARDIAC TUMOR				
33120	Excision of intracardiac tumor, resection with cardiopulmonary bypass	50.0	90	15.0
33130	Resection of external cardiac tumor	25.0	90	12.0
	(For injection procedure for coronary arteriography, see 36230)			
	(For cardiac catheterization, see 93501-93566)			
	(For electronic analysis of internal pacemaker system, see 93795, 93796)			
	(For fluoroscopy and radiography procedure with insertion of pacemaker, see 71090)			
33200	Insertion of permanent pacemaker with epicardial electrode; by thoracotomy	24.0	90	15.0
33201	by xiphoid approach	24.0	90	15.0
	(33205 has been deleted. To report use 33206-33208)			
33206	Insertion of permanent pacemaker with transvenous electrode(s); atrial	BR		3.0
33207	ventricular	BR		3.0
33208	AV sequential	BR		3.0
33210	Insertion of temporary transvenous cardiac electrode, or pacemaker catheter (separate procedure)	7.0	15	Sv.&
33212	Insertion or replacement of pulse generator only	4.0	30	6.0
33216	Insertion, replacement, or repositioning of permanent transvenous electrodes only (15 days or more after initial insertion)	8.0	30	6.0
33218	Repair of pacemaker; electrodes only	5.0	30	6.0
33219	with replacement of pulse generator	BR		6.0
33232	Removal of permanent pacemaker	BR		6.0
WOUNDS OF THE HEART AND GREAT VESSELS				
33300	Repair of cardiac wound; without bypass	24.0	90	15.0
33305	with cardiopulmonary bypass	30.0	90	15.0
33310	Cardiotomy, exploratory (includes removal of foreign body); without bypass	22.0	90	15.0
33315	with cardiopulmonary bypass	34.0	90	15.0
33320	Suture repair of aorta or great vessels; without bypass	20.0	90	15.0
33322	with cardiopulmonary bypass	30.0	90	15.0
33330	Insertion of graft; without bypass	30.0	90	15.0
33335	with cardiopulmonary bypass	40.0	90	15.0
33350	Great vessel repair with other major procedure	BR		15.0
CARDIAC VALVES AORTIC VALVE				
33400	Valvuloplasty, aortic valve, open, with cardiopulmonary bypass	50.0	90	15.0
33405	Replacement, aortic valve with cardiopulmonary bypass	52.0	90	15.0
33407	Valvotomy, aortic valve (commissurotomy); with cardiopulmonary bypass	BR		15.0
33408	with inflow occlusion	BR		15.0
	(For multiple valve replacement, see 33480-33492)			
33415	Resection of aortic valve for subvalvular stenosis	40.0	90	15.0
33417	Aortoplasty (gusset) for supravalvular stenosis	40.0	90	15.0
MITRAL VALVE				
33420	Valvotomy, mitral valve (commissurotomy); closed	32.0	90	15.0
33422	open, with cardiopulmonary bypass	50.0	90	15.0
33425	Valvuloplasty, mitral valve, with cardiopulmonary bypass	52.0	90	15.0
33430	Replacement, mitral valve, with cardiopulmonary bypass	52.0	90	15.0
TRICUSPID VALVE				
33450	Valvotomy, tricuspid valve (commissurotomy); closed	32.0	90	15.0
33452	open, with cardiopulmonary bypass	50.0	90	15.0

		Unit Value	Follow-up Days=	Basic Anes@
33460	Valvuloplasty or valvectomy, tricuspid valve, with cardiopulmonary bypass;	50.0	90	15.0
33465	replacement	52.0	90	15.0
	(For multiple valve replacement, see 33480–33492)			
33468	Tricuspid valve repositioning and plication for Ebstein anomaly	50.0	90	15.0
	PULMONARY VALVE			
33470	Valvotomy, pulmonary valve (commissurotomy); closed (transventricular)	32.0	90	15.0
33472	open, with inflow occlusion	32.0	90	15.0
33474	open, with cardiopulmonary bypass	50.0	90	15.0
33476	Right ventricular resection for infundibular stenosis, with or without commissurotomy	50.0	90	15.0
33478	Outflow tract augmentation (gusset), with or without commissurotomy or infundibular resection	52.0	90	15.0
	MULTIPLE VALVE PROCEDURES			
33480	Replacement and/or repair, double valve procedure, by methods 33400–33465	70.0	90	15.0
33481	Single valve replacement; with commissurotomy or valvuloplasty of another valve	56.0	90	15.0
33482	with commissurotomy or valvuloplasty of two valves	60.0	90	15.0
33483	Double valve replacement;	65.0	90	15.0
33485	with commissurotomy or valvuloplasty of one valve	67.0	90	15.0
33490	Replacement and/or repair, triple valve procedure, by methods 33400 to 33465	80.0	90	15.0
33492	Triple valve replacement	85.0	90	15.0
	CORONARY ARTERY PROCEDURES			
33502	Anomalous coronary artery; ligation	20.0	90	15.0
33503	graft, without bypass	25.0	90	15.0
33504	graft, with bypass	35.0	90	15.0
33510	Coronary artery bypass, autogenous graft, e.g., saphenous vein or internal mammary artery; single artery	35.0	90	15.0
33511	two coronary arteries	56.0	90	15.0
33512	three coronary arteries	67.0	90	15.0
33513	four coronary arteries	67.0	90	15.0
33514	five coronary arteries	67.0	90	15.0
33516	six or more coronary arteries	67.0	90	15.0
	(For separate procurement of autogenous graft, see modifier –75, services rendered by more than one physician)			
33520	Coronary artery bypass, nonautogenous graft (e.g., synthetic or cadaver); single artery	30.0	90	15.0
33525	two coronary arteries	35.0	90	15.0
33528	three or more coronary arteries	50.0	90	15.0
	(33532 Myocardial implantation has been deleted. To report, use 33999)			
	POSTINFARCTION MYOCARDIAL PROCEDURES			
33542	Myocardial resection (e.g., ventricular aneurysmectomy)	35.0	90	15.0
33545	Repair of postinfarction ventricular septal defect, with or without myocardial resection	50.0	90	15.0
33560	Myocardial operation combined with coronary bypass procedure	BR		
33570	Coronary angioplasty (end arterectomy, with or without gas, arterial implantation or anastomosis), with bypass;	60.0	90	15.0
33575	combined with vascularization	68.0	90	15.0
	SEPTAL DEFECT			
33640	Repair atrial septal defect, secundum; without bypass	32.0	90	15.0
33641	with cardiopulmonary bypass	46.0	90	15.0
33643	patch closure, with or without anomalous pulmonary venous drainage	30.0	90	15.0
33645	Direct or patch closure, sinus venosus, with or without anomalous pulmonary venous drainage	30.0	90	15.0
33649	Repair of tricuspid atresia (e.g., Fontan, Gago procedures)	BR		15.0
33660	Patch closure, endocardial cushion defect, with or without repair of mitral and/or tricuspid cleft;	50.0	90	15.0
33665	with repair of separate ventricular septal defect	35.0	90	15.0
33670	Repair of complete atrioventricular canal, with or without prosthetic valve	50.0	90	15.0
33681	Closure ventricular septal defect; direct	35.0	90	15.0
33682	patch	50.0	90	15.0
33684	with pulmonary valvotomy or infundibular resection (acyanotic)	50.0	90	15.0
33688	with removal of pulmonary artery band, with or without gusset	5.0		
33690	Banding of pulmonary artery	15.0	90	15.0
33692	Total repair tetralogy of Fallot; intact outflow tract	50.0	90	15.0
33694	with outflow tract gusset	50.0	90	15.0
33696	with closure of previous shunt	8.0		
	SINUS OF VALSALVA			
33702	Repair sinus of Valsalva fistula, with cardiopulmonary bypass;	50.0	90	15.0
33710	with repair of ventricular septal defect	35.0	90	15.0
33720	Repair sinus of Valsalva aneurysm, with cardiopulmonary bypass	50.0	90	15.0
	TOTAL ANOMALOUS PULMONARY VENOUS DRAINAGE			
33730	Complete repair of anomalous venous return (supracardiac, intracardiac, or infracardiac types)	50.0	90	15.0
	(For partial anomalous return, see atrial septal defect)			
	SHUNTING PROCEDURES			
33735	Atrial septectomy or septostomy; closed (Blalock–Hanlon type operation)	32.0	90	15.0
33737	open, with inflow occlusion	40.0	90	15.0

		Unit Value	Follow-up Days=	Basic Anes@
33738	transvenous method, balloon, Rashkind type (includes cardiac catheterization)	50.0	90	15.0
33739	blade method (Sang-Park septostomy) (includes cardiac catheterization)	BR		15.0
33750	Shunt; subclavian to pulmonary artery (Blalock-Taussig type operation)	30.0	90	15.0
33755	ascending aorta to pulmonary artery (Waterston type operation)	30.0	90	15.0
33762	descending aorta to pulmonary artery (Potts-Smith type operation)	30.0	90	15.0
33766	vena cava to pulmonary artery (Glenn type operation)	30.0	90	15.0
	TRANSPOSITION OF THE GREAT VESSELS			
33782	Repair transposition of great vessels, atrial baffle procedure (Mustard type); with cardiopulmonary bypass	50.0	90	15.0
33783	with removal of pulmonary artery band, with or without gusset	50.0	90	15.0
33784	with closure of ventricular septal defect	50.0	90	15.0
	TRUNCUS ARTERIOSUS			
33786	Total repair, truncus arteriosus (Rastelli type operation)	50.0	90	15.0
33788	Replant pulmonary artery for hemitruncus	30.0	90	15.0
	(For pulmonary artery band, see 33690)			
	AORTIC ANOMALIES			
33802	Division of aberrant vessel (vascular ring);	18.0	90	15.0
33803	with reanastomosis	20.0	90	15.0
33810	Creation of aortopulmonary window; without bypass	20.0	90	15.0
33812	with cardiopulmonary bypass	30.0	90	15.0
33820	Patent ductus arteriosus; ligation (primary procedure)	15.0	90	15.0
33822	division, under 18 years	18.0	90	15.0
33824	division, 18 years and older	20.0	90	15.0
33830	ligation or division when performed with another procedure	5.0		15.0
33840	Excision of coarctation of aorta, with or without associated patent ductus arteriosus; with direct anastomosis	20.0	90	15.0
33845	with graft	30.0	90	15.0
33850	with shunt, left subclavian to descending aorta (Blalock-Park type operation)	30.0	90	15.0
	THORACIC AORTIC ANEURYSM			
33860	Ascending aorta graft, with cardiopulmonary bypass; with or without valve suspension	40.0	90	15.0
33865	with valve replacement	50.0	90	15.0
33870	Transverse arch graft, with cardiopulmonary bypass	60.0	90	15.0
33875	Descending thoracic aorta graft, with or without bypass	20.0	90	15.0
	PULMONARY ARTERY			
33910	Pulmonary artery embolectomy; with cardiopulmonary bypass	30.0	90	15.0
33915	without bypass	20.0	90	15.0
	MISCELLANEOUS			
33950	Cardiac transplantation, including removal of donor heart	BR		15.0
33960	Prolonged extracorporeal circulation for cardiopulmonary insufficiency	BR		15.0
33970	Intra-aortic balloon counterpulsation; insertion and removal	10.0	10	15.0
	(For percutaneous insertion and removal, see 93535)			
33972	monitoring only	BR		15.0
33999	Unlisted procedure, cardiac surgery	BR		15.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-120, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-120, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-120, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-120, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-120, filed 1/30/74; Order 68-7, § 296-22-120, filed 11/27/68, effective 1/1/69.]

WAC 296-22-125 Arteries and veins.

		Unit Value	Follow-up Days=	Basic Anes@
	ARTERIAL EMBOLECTOMY OR THROMBECTOMY, WITH OR WITHOUT CATHETER			
34001	Embolectomy or thrombectomy, with or without catheter; carotid, subclavian artery, by neck incision	14.0	60	6.0
34051	innominate, subclavian artery, by thoracic incision	14.0	60	11.0
34101	axillary, brachial, innominate, subclavian artery, by arm incision	14.0	60	5.0
34151	renal, celiac, mesentery, aorto-iliac artery, by abdominal incision	20.0	60	6.0
34201	femoropopliteal, aortoiliac artery, by leg incision	14.0	60	5.0
	VENOUS THROMBECTOMY, DIRECT OR WITH CATHETER			
34401	Thrombectomy, direct or with catheter; vena cava, iliac vein, by abdominal incision	18.0	60	5.0
34421	vena cava, iliac, femoropopliteal vein, by leg incision	12.0	60	3.0
34451	vena cava, iliac, femoropopliteal vein, by abdominal and leg incision	24.0	60	5.0
34471	subclavian vein, by neck incision	28.0	60	5.0
34490	axillary and subclavian vein, by arm incision	28.0	60	5.0
	DIRECT REPAIR OF ANEURYSM, OR EXCISION (PARTIAL OR TOTAL) AND GRAFT INSERTION FOR ANEURYSM, FALSE ANEURYSM, RUPTURED ANEURYSM, OR OCCLUSIVE DISEASE			

		Unit Value	Follow-up Days=	Basic Anes@
	(For intracranial aneurysm, see 61700 et seq.)			
	(For thoracic aortic aneurysm, see 33860–33875)			
35001	Direct repair of aneurysm or excision (partial or total) and graft insertion, with or without patch graft; for aneurysm or occlusive disease, carotid, subclavian artery, by neck incision	28.0	90	6.0
35002	for ruptured aneurysm, carotid, subclavian artery by neck incision	BR		6.0
35011	for aneurysm or occlusive disease, axillary–brachial artery, by arm incision	28.0	90	5.0
35013	for ruptured aneurysm, axillary–brachial artery, by arm incision	BR		
35021	for aneurysm or occlusive disease, innominate, subclavian artery, by thoracic incision	32.0	90	12.0
35022	for ruptured aneurysm, innominate, subclavian artery, by thoracic incision	BR		
35081	for aneurysm or occlusive disease, abdominal aorta	40.0	90	12.0
35082	for ruptured aneurysm, abdominal aorta	BR		12.0
35091	for aneurysm or occlusive disease, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	BR		12.0
35092	for ruptured aneurysm, abdominal aorta involving visceral vessels (mesenteric, celiac, renal)	BR		12.0
35102	for aneurysm or occlusive disease, abdominal aorta involving iliac vessels (common, hypogastric, external)	40.0	90	12.0
35103	for ruptured aneurysm, abdominal aorta involving iliac vessels (common, hypogastric, external)	BR		12.0
35111	for aneurysm or occlusive disease, splenic artery	24.0	90	6.0
35112	for ruptured aneurysm, splenic artery	BR		
35121	for aneurysm or occlusive disease, hepatic, celiac, renal, or mesenteric artery	40.0	90	6.0
35122	for ruptured aneurysm, hepatic, celiac, renal, or mesenteric artery	BR		6.0
35131	for aneurysm or occlusive disease, iliac artery (common, hypogastric, external)	32.0	90	6.0
35132	for ruptured aneurysm, iliac artery (common, hypogastric, external)	BR		6.0
35141	for aneurysm or occlusive disease, common femoral artery (profunda femoris, superficial femoral)	28.0	90	5.0
35142	for ruptured aneurysm, common femoral artery (profunda femoris, superficial femoral)	BR		
35151	for aneurysm or occlusive disease, popliteal artery	28.0	90	5.0
35152	for ruptured aneurysm, popliteal artery	BR		5.0
35161	for aneurysm or occlusive disease, other arteries (e.g., radial, brachial, ulnar)	BR		5.0
35162	for ruptured aneurysm, other arteries (e.g., radial, brachial, ulnar)	BR		5.0

REPAIR BLOOD VESSEL OR ARTERIOVENOUS FISTULA, WITH OR WITHOUT PATCH GRAFT

35201	Repair blood vessels or A–V fistula, direct; neck	28.0	60	6.0
35206	upper extremity	28.0	60	3.0
35207	hand and finger	BR	60	3.0
35211	intrathoracic, with bypass	35.0	60	6.0
35216	intrathoracic, without bypass	30.0	60	3.0
35221	intra–abdominal	34.0	90	5.0
35226	lower extremity	28.0	60	3.0
35231	Repair blood vessel or A–V fistula with vein graft; neck	30.0	60	6.0
35236	upper extremity	30.0	60	6.0
35241	intrathoracic, with bypass	40.0	60	6.0
35246	intrathoracic, without bypass	35.0	60	6.0
35251	intra–abdominal	40.0	90	6.0
35256	lower extremity	32.0	60	3.0
35261	Repair blood vessel or A–V fistula with graft other than vein; neck	32.0	60	6.0
35266	upper extremity	32.0	60	6.0
35271	intrathoracic, with bypass	42.0	60	6.0
35276	intrathoracic, without bypass	37.0	60	6.0
35281	intra–abdominal	42.0	90	6.0
35286	lower extremity	34.0	60	3.0

THROMBOENDARTERECTOMY

	(For coronary artery, see 33570, 33575)			
35301	Thromboendarterectomy, with or without patch graft; carotid, vertebral, subclavian, by neck incision	30.0	90	6.0
35311	subclavian, innominate, by thoracic incision	30.0	90	11.0
35321	axillary–brachial	30.0	90	5.0
35331	abdominal aorta	40.0	90	12.0
35341	mesenteric, celiac, or renal	40.0	90	6.0
35351	iliac	32.0	90	6.0
35361	combine aortoiliac	40.0	90	12.0
35371	common and/or deep (profunda) femoral	28.0	90	5.0
35381	femoral and/or popliteal, and/or tibioperoneal	28.0	90	5.0

BYPASS GRAFT—VEIN

35501	Bypass graft, vein; carotid	30.0	90	6.0
35506	carotid–subclavian	30.0	90	6.0
35507	subclavian–carotid	30.0	90	6.0
35509	carotid–carotid	30.0	90	11.0
35511	subclavian–subclavian	30.0	90	11.0
35516	subclavian–axillary	30.0	90	6.0
35521	axillary–femoral	30.0	90	5.0
35526	aortosubclavian or carotid	32.0	90	12.0
35531	aortoceliac, mesenteric, or renal	36.0	90	12.0
35536	splenorenal	32.0	90	10.0
35541	aortoiliac	32.0	90	12.0
35546	aortofemoral	32.0	90	12.0
35548	aortoiliofemoral, unilateral	32.0	90	12.0
35549	aortoiliofemoral, bilateral	40.0	90	12.0
35551	aorto–femoral–popliteal	40.0	90	12.0
35556	femoral–popliteal	28.0	90	5.0
35558	femoral–femoral	28.0	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
35563	ilioiliac	30.0	90	12.0
35565	iliofemoral	32.0	90	12.0
35566	femoral–anterior tibial, posterior tibial, or peroneal artery	30.0	90	12.0
35571	popliteal–tibial	32.0	90	12.0

BYPASS GRAFT—WITH OTHER THAN VEIN INCLUDING MANDRIL GROWN GRAFT

35601	Bypass graft, with other than vein, carotid	40.0	90	12.0
35606	carotid–subclavian	40.0	90	12.0
35612	subclavian–subclavian	40.0	90	12.0
35616	subclavian–axillary	30.0	90	6.0
35621	axillary–femoral	35.0	90	12.0
35626	aortosubclavian or carotid	35.0	90	12.0
35631	aortoceliac, mesenteric, renal	35.0	90	12.0
35636	splenorenal	35.0	90	12.0
35641	aortoiliac	35.0	90	12.0
35646	aortofemoral	30.0	90	12.0
35651	aortofemoral–popliteal	30.0	90	12.0
35656	femoral–popliteal	28.0	90	5.0
35661	femoral–femoral	28.0	90	5.0
35663	ilioiliac	28.0	90	5.0
35665	iliofemoral	28.0	90	5.0
35666	femoral–anterior tibial, posterior tibial, or peroneal artery	28.0	90	5.0
35671	popliteal–tibial	28.0	90	5.0

EXPLORATION (NOT FOLLOWED BY SURGICAL REPAIR) WITH OR WITHOUT LYSIS ARTERY

35701	Exploration; carotid artery	10.0	30	3.0
35721	femoral artery	8.0	30	3.0
35741	popliteal artery	8.0	30	3.0
35761	Other vessels	BR		BR

EXPLORATION FOR POSTOPERATIVE HEMORRHAGE OR THROMBOSIS

35800	Exploration for postoperative hemorrhage or thrombosis; neck	BR		BR
35820	chest	BR		BR
35840	abdomen	BR		BR
35860	extremity	BR		BR

EXCISION OF GRAFT

35900	Excision of infected graft;	BR		
35910	with revascularization	BR		

Introduction

VASCULAR INJECTION PROCEDURES

NOTES

Listed services for injection procedures include necessary local anesthesia, introduction of needles or catheter, injection of contrast medium with or without automatic power injection and necessary pre and postinjection care specifically related to the injection procedure.

For radiological vascular injection performed by a single physician as a complete procedure (necessary local anesthesia, placement of needle or catheter and injection of contrast media, and supervision of the study and interpretation of results), see RADIOLOGY section, code numbers 75500–75893.

Catheters, drugs and contrast media are not included in the listed service for the injection procedures.

(For injection procedures in conjunction with cardiac catheterization, see 93541–93545)

(For chemotherapy of malignant disease, see 96500–96549)

		Unit Value	Follow-up Days=	Basic Anes@

INTRAVENOUS

(An intracatheter is a sheathed combination of needle and short catheter)

36000	Introduction of needle or intracatheter, vein; unilateral	1.0	0	
36001	bilateral	1.4	0	
36010	Introduction of catheter; in superior or inferior vena cava, right heart or pulmonary artery	2.0	0	3.0

(For venous catheterization for selective organ blood sampling, see 36500)

INTRA–ARTERIAL—INTRA–AORTIC

36100	Introduction of needle or intracatheter, carotid or vertebral artery; unilateral	5.0	0	3.0
36101	bilateral	6.0	0	3.0
36120	Introduction of needle or intracatheter; retrograde brachial artery	5.0	0	3.0
36140	extremity artery	2.0	0	3.0
36145	Arteriovenous shunt for dialysis (fistula or graft)	1.0	0	3.0

(For insertion of arteriovenous cannula, see 36810–36820)

36160	Introduction of needle or intracatheter, aortic, translumbar	3.0	0	3.0
36200	Introduction of catheter; aorta (arch, abdominal, midstream renal, aorto–iliac run–off)	4.0	0	3.0
36210	cerebral artery, selective, single	5.8	0	3.0
36220	multiple cerebral arteries, with or without midstream arch injection	7.0	0	3.0
36230	coronary artery, selective, unilateral or bilateral	6.0	0	7.0
36240	renal, celiac, mesenteric or other artery, selective, single, with or without midstream injection	5.0	0	3.0
36250	bilateral renal or multiple arteries	6.0	0	3.0
36299	Unlisted procedure, vascular injection	BR		3.0

VENOUS

Venipuncture, complex or nonroutine, needle or catheter for diagnostic study or intravenous therapy, percutaneous:

36400	Venipuncture, under age 3 years; femoral, jugular or sagittal sinus	0.4	0	
36405	scalp vein	0.6	0	
36410	Venipuncture, child over age 3 years or adult, necessitating physician's skill (separate procedure), for venography (upper extremity, vena cava, adrenal, renal, iliac, femoral, popliteal, tibial, saphenous, jugular, innominate vein). Not to be used for routine venipuncture	0.2	0	
*36415	Routine venipuncture for collection of specimen(s)	BR	0	

(For diagnostic collection, see 99000–99001)

		Unit Value	Follow-up Days=	Basic Anes@
36420	Venipuncture, cutdown; under age 1 year	1.0	7	
36425	age 1 or over	0.72	7	
36430	Transfusion, blood or blood components; indirect	0.4	0	
36431	direct	1.2	7	
*36440	Push transfusion, blood, 2 years or under	1.2	0	
36450	Exchange transfusion; newborn	7.0	0	
36455	other than newborn	BR+		
36460	Transfusion, intrauterine, fetal	BR+		
*36470	Injection of sclerosing solution; single vein	*0.28	0	
*36471	multiple veins, same leg	*0.4	0	
36480	Catheterization, subclavian, external jugular or other vein, for central venous pressure determination; percutaneous	0.8	7	
36485	by cutdown	0.8	7	
*36490	Cutdown placement of central venous catheter for hyperalimentation; age 2 years or under	3.0	15	
*36491	over age 2	2.0	15	
	(For examination of patient and instruction to patient, review of prescription of fluids for long-term or permanent hyperalimentation, use levels of care listed in office or hospital visits category or consultative follow-up codes as appropriate)			
36500	Venous catheterization for selective organ blood sampling	BR		
36510	Catheterization of umbilical vein for diagnosis or therapy, newborn	0.6	7	

ARTERIAL

*36600	Arterial puncture; withdrawal of blood for diagnosis	0.2	0	
36620	Arterial catheterization or cannulation for sampling, monitoring or transfusion (separate procedure); percutaneous	1.0	0	
36625	cutdown	1.4	7	
36640	Arterial catheterization for prolonged infusion therapy (chemotherapy), cutdown (see also 96526)	2.0	7	
*36660	Catheterization, umbilical artery, newborn, for diagnosis or therapy	1.0	7	

INTERVASCULAR CANNULIZATION OR SHUNT (SEPARATE PROCEDURE)

36800	Insertion of cannula for hemodialysis, other purpose; vein to vein	3.0	7	3.0
36810	arteriovenous, external (Scribner type)	9.0	7	3.0
36815	arteriovenous, external revision or closure	6.0	7	3.0
36820	arteriovenous, internal (Cimino type)	BR		3.0
36821	Arteriovenous anastomosis, direct, any site	10.0	60	4.0
36825	Arteriovenous fistula; autogenous graft	15.0	60	4.0
36830	nonautogenous graft	12.0	60	4.0
36835	Thomas shunt	15.0	60	4.0
36840	Insertion mandril	6.0	60	4.0
36845	Anastomosis mandril	10.0	60	4.0
36860	Cannula declotting; without balloon catheter	BR		4.0
36861	with balloon catheter	BR		4.0
37140	Anastamosis, portacaval	32.0	90	11.0
	(For peritoneal-venous shunt, see 49425)			
37145	renoportal	32.0	90	9.0
37160	caval-mesenteric	32.0	90	9.0
37180	Splenorenal, proximal	32.0	90	9.0
37181	splenorenal, distal (selective decompression of esophagogastric varices, any technique)	BR		9.0
37190	Plastic repair of arteriovenous aneurysm	BR		9.0

REPAIR, LIGATION AND OTHER PROCEDURES

37400	Arteriorrhaphy suture of major artery, wound or injury (separate procedure); neck	12.0	30	6.0
37420	chest	20.0	60	15.0
37440	abdomen	20.0	60	9.0
37460	extremity	10.0	30	4.0
37470	Repair multiple arteries and/or veins	BR		6.0
37500	Phleborrhaphy suture of major vein, wound or injury (separate procedure); neck	10.0	30	6.0
37520	chest	20.0	60	12.0
37540	abdomen	20.0	60	6.0
37560	extremity	8.0	30	3.0
37565	Ligation of internal jugular vein	BR		6.0
37600	Ligation, external carotid artery	10.0	30	3.0
37605	internal or common carotid artery	10.0	30	3.0
37606	internal or common carotid artery, with gradual occlusion, as with Selverstone or Crutchfield clamp	10.0	30	4.0
	(For litigation treatment of intracranial aneurysm, see 61703)			
37609	Ligation or biopsy, temporal artery	4.0	30	4.0
37615	Ligation, major artery (e.g., post-traumatic, rupture); neck	BR		4.0
37616	chest	BR		6.0
37617	abdomen	BR		6.0
37618	extremity	BR		4.0
37620	Interruption, partial or complete, of inferior vena cava by suture, ligation, plication, clip, extravascular, intravascular (umbrella device)	16.0	90	5.0
37650	Interruption, partial or complete, of femoral vein, by ligature, intravascular device; unilateral	8.0	30	3.0
37651	bilateral	10.0	30	3.0
37660	Interruption, partial or complete, of common iliac vein by ligature, intravascular device	12.0	90	3.0
37700	Ligation and division of long saphenous vein at saphenofemoral junction, or distal interruptions; unilateral	4.8	30	3.0
37701	bilateral	6.0	60	3.0
37720	Ligation and division and complete stripping of long or short saphenous veins; unilateral	7.0	30	3.0

		Unit Value	Follow-up Days=	Basic Anes@
37721	bilateral	12.0	30	3.0
37730	Ligation and division and complete stripping of long and short saphenous veins; unilateral	10.0	30	3.0
37731	bilateral	14.5	30	3.0
37735	Ligation and division and complete stripping of long or short saphenous veins with radical excision of ulcer and skin graft and/or interruption of communicating veins of lower leg, with excision of deep fascia; unilateral	18.0	30	3.0
37737	bilateral	22.0	30	3.0
37760	Ligation of perforators, subfascial, radical (Linton type), with or without skin graft	10.0	60	3.0
37780	Ligation and division of short saphenous vein at saphenopopliteal junction (separate procedure); unilateral	2.0	30	3.0
37781	bilateral	4.0	30	3.0
37785	Ligation and division of minor varicose vein of leg	1.2	15	3.0
37787	Bilateral	1.8	15	3.0
37799	Unlisted procedure, vascular surgery	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-125, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-125, filed 1/30/74; Order 68-7, § 296-22-125, filed 11/27/68, effective 1/1/69.]

HEMIC AND LYMPHATIC SYSTEMS

WAC 296-22-130 Spleen.

		Unit Value	Follow-up Days=	Basic Anes@
EXCISION				
38090	Puncture spleen	10.0	45	6.0
38100	Splenectomy; total	14.5	45	6.0
38101	partial	14.5	45	6.0
REPAIR				
38115	Repair of ruptured spleen (splenorrhaphy) with or without partial splenectomy	13.0	45	6.0
INTRODUCTION				
38200	Injection procedure for splenoportography	2.0	7	3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-22-130, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-130, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-130, filed 1/30/74; Order 68-7, § 296-22-130, filed 11/27/68, effective 1/1/69.]

WAC 296-22-132 Bone marrow transplantation services.

		Unit Value	Follow-up Days=	Basic Anes@
38230	Bone marrow harvesting for transplantation	BR		3.0
38240	Bone marrow transplantation	BR		3.0
	(For compatibility studies, see 86810-86822)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-132, filed 2/28/86, effective 4/1/86.]

WAC 296-22-135 Lymph nodes and lymphatic channels.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*38300	Drainage of lymph node abscess or lymphadenitis, simple	*0.6	0	3.0
38305	extensive	BR		3.0
38308	Lymphangiotomy or other operations on lymphatic channels	BR		3.0
38380	Suture and/or ligation of thoracic duct; cervical approach	BR		3.0
38381	thoracic approach	BR		3.0
EXCISION				
38500	Biopsy or excision of lymph node; unspecified (separate procedure)	1.4	15	3.0
38510	deep, cervical node	3.4	30	3.0
38520	deep cervical node with excision scalene fat pad	5.0	30	3.0
38530	internal mammary node (separate procedure)	7.0	60	3.0
	(For percutaneous needle biopsy, retroperitoneal lymph node or mass, see 49180)			
38540	Dissection; deep cervical node	BR	60	3.0
38542	deep jugular node	BR	60	3.0
	(For radical cervical neck dissection, see 38720, 38721)			
38550	Excision of cystic hygroma, axillary or cervical, without deep neurovascular dissection; simple	6.0	60	3.0
38555	complex	BR		3.0
RADICAL LYMPHADENECTOMY (RADICAL RESECTION OF LYMPH NODES)				
38700	Suprahyoid lymphadenectomy; unilateral	12.0	60	4.0
38701	bilateral	15.0	60	4.0
38720	Cervical lymphadenectomy (complete); unilateral	19.0	60	4.0
38721	bilateral	22.0	60	4.0
38724	Cervical lymphadenectomy (modified radical neck dissection)	BR		4.0
38740	Axillary lymphadenectomy; superficial	8.0	60	3.0
38745	complete	14.0	60	3.0
38760	Inguinofemoral lymphadenectomy, superficial, including Cloquet's node (separate procedure); unilateral	8.0	60	3.0
38761	bilateral	12.0	60	3.0

		Unit Value	Follow-up Days=	Basic Anes@
38765	Inguinofemoral lymphadenectomy, superficial, in continuity with pelvic lymphadenectomy, including external iliac hypogastric and obturator nodes (separate procedure); unilateral	20.0	60	5.0
38766	bilateral	24.0	60	5.0
38770	Pelvic lymphadenectomy, including external iliac, hypogastric, and obturator nodes (separate procedure); unilateral	12.0	60	6.0
38771	bilateral	20.0	60	6.0
38780	Retroperitoneal lymphadenectomy, extensive, including pelvic, aortic, and renal nodes (separate procedure)	28.0	90	7.0
	(For excision and repair of lymphedematous skin and subcutaneous tissue, see 15000, 15500-15730)			
INTRODUCTION				
38790	Injection procedure for lymphangiography; unilateral	3.0	7	
38791	bilateral	4.0	7	
38794	Cannulation, thoracic duct	BR		
38999	Unlisted procedure, hemic or lymphatic system	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-135, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-135, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-135, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-135, filed 1/30/74; Order 68-7, § 296-22-135, filed 11/27/68, effective 1/1/69.]

MEDIASTINUM AND DIAPHRAGM

WAC 296-22-140 Mediastinum.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
39000	Mediastinotomy with exploration or drainage; cervical approach	6.0	90	6.0
39010	transthroacic	12.0	90	12.0
39020	sternal split	22.0	90	12.0
39050	Removal of foreign body, mediastinum; cervical approach	8.0	90	6.0
39060	transthoracic	12.0	90	12.0
39070	sternal split	22.0	90	12.0
EXCISION				
39200	Excision of mediastinal cyst	18.0	90	12.0
39220	Excision of mediastinal tumor	18.0	90	12.0
	(For substernal thyroidectomy, see 60270)			
	(For thymectomy, see 60520)			
ENDOSCOPY				
39400	Mediastinoscopy, with or without biopsy	BR		3.0
REPAIR				
39499	Unlisted procedure, mediastinum	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-140, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-140, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-140, filed 1/30/74; Order 68-7, § 296-22-140, filed 11/27/68, effective 1/1/69.]

WAC 296-22-141 Diaphragm.

		Unit Value	Follow-up Days=	Basic Anes@
REPAIR				
39502	Repair, diaphragmatic hernia (esophageal hiatal), transabdominal; except neonatal	BR		6.0
39503	neonatal, including chest tube and ventral hernia repair	BR		7.0
	(39500, 39510, Diaphragmatic hernia repair including fundoplasty have been deleted. To report, see 43324 or 43325)			
39520	Repair, diaphragmatic hernia (esophageal hiatal); transthoracic	17.0	90	11.0
39530	combined, thoracicoabdominal	19.0	90	11.0
39531	combined, thoracicoabdominal, with dilation of stricture (with or without gastrectomy)	BR		11.0
39540	Repair, diaphragmatic hernia (other than neonatal), traumatic; acute	BR		13.0
39541	chronic	BR		11.0
39545	Imbrication of diaphragm for eventration; paralytic	22.0	90	7.0
39547	nonparalytic	BR		7.0
39599	Unlisted procedure, diaphragm	BR		7.0
	(For incidental repair of minor hiatal hernia, see WAC 296-22-010, item 7b)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-141, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-141, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-141, filed 1/30/74. Formerly WAC 296-22-070 (part).]

DIGESTIVE SYSTEM

WAC 296-22-145 Mouth.

		Unit Value	Follow-up Days=	Basic Anes@
	(40000-40010 have been deleted. See 41000 et seq.)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-145, filed 2/28/86, effective 4/1/86; Order 74-7, § 296-22-145, filed 1/30/74; Order 68-7, § 296-22-145, filed 11/27/68, effective 1/1/69.]

WAC 296-22-146 Lips.

		Unit Value	Follow-up Days=	Basic Anes@
	(For procedures on skin of lips, see 10000 et seq.)			
EXCISION				
40490	Biopsy lip	0.6	7	3.0
40500	Vermilionectomy ("lip peel") with mucosal advancement	10.5	120	3.0
40510	Excision lip; transverse wedge excision	10.5	120	3.0
40520	V-excision of lesion with primary direct linear closure	6.0	120	3.0
40525	full thickness, reconstruction with local flap (e.g., Estlander or fan)	BR		3.0
40527	full thickness, reconstruction with cross lip flap (Abbe-Estlander)	BR		3.0
	(For excision of mucous lesions, see 40810-40814)			
40530	Resection lip, more than one-fourth, without reconstruction	6.0	120	3.0
	(For lip reconstruction (see 13131 et seq.))			
REPAIR (CHEILOPLASTY)				
40650	Repair lip, full thickness; vermilion only	BR		3.0
40652	up to half vertical height	BR		3.0
40654	over one half vertical height, or complex	BR		3.0
40700	Plastic repair of cleft lip; primary, partial or complete, unilateral	16.0	90	6.0
40701	Primary bilateral, one stage procedure	20.0	90	6.0
40702	primary bilateral, one of two stages	14.0	90	6.0
40720	secondary, unilateral, by recreation of defect and reclosure	16.0	90	6.0
40740	secondary, bilateral (per major stage)	14.0	90	6.0
	(40760 Cross lip pedicle flap repair of cleft lip (Abbe-Estlander type) has been deleted. To report, use 40527)			
40761	with cross lip pedicle flap (Abbe-Estlander type), including sectioning and inserting of pedicle	BR		6.0
	(For repair cleft palate, see 42200 et seq.)			
	(For other reconstructive procedures, see 14060, 14061, 15120-15261, 15515 et seq.)			
OTHER PROCEDURES				
40799	Unlisted procedure, lips	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-146, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-146, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-146, filed 1/30/74. Formerly WAC 296-22-145 (part).]

WAC 296-22-147 Vestibule of mouth.

		Unit Value	Follow-up Days=	Basic Anes@
The vestibule is the part of the oral cavity outside the dentoalveolar structures; it includes the mucosal and submucosal tissue of lips and cheeks.				
INCISION				
40800*	Drainage of abscess, cyst, hematoma, vestibule of mouth; simple	0.4	0	4.0
40801	complicated	BR	0	4.0
40804*	Removal of embedded foreign body; simple	0.4	0	4.0
40805	complicated	BR		4.0
40806	Incision of labial frenum (frenotomy)	Sv		4.0
EXCISION, DESTRUCTION				
40808	Biopsy, vestibule of mouth	0.6	0	4.0
40810	Excision of lesion of mucosa and submucosa; without repair	0.6	0	4.0
40812	with simple repair	1.0	0	4.0
40814	with complex repair	BR	0	4.0
40816	Excision of lesion of mucosa, submucosa, and underlying muscle	BR	0	4.0
40818	Excision of mucosa as donor graft	BR	0	4.0
40819	Excision of frenum, labial or buccal (frenumectomy, frenulectomy, frenectomy)	BR	0	4.0
40820	Destruction of lesion or scar by physical methods (e.g., thermal, cryo, chemical)	BR	0	4.0
REPAIR				
40830	Closure of laceration; up to 2 cm	0.4	0	4.0
40831	over 2 cm or complex	0.4	0	4.0
40840	Vestibuloplasty; anterior	BR	0	4.0
40842	posterior, unilateral	BR	0	4.0
40843	posterior, bilateral	BR	0	4.0
40844	entire arch	BR	0	4.0
40845	complex (including ridge extension, muscle repositioning)	BR	0	4.0
	(For skin grafts, see 15000 et seq.)			
OTHER PROCEDURES				
40899	Unlisted procedure, vestibule of mouth	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-147, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-147, filed 12/3/80, effective 3/1/81.]

WAC 296-22-150 Tongue, floor of mouth.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*41000	Incision and drainage of intraoral abscess, cyst, or hematoma of tongue or floor of mouth; lingual	*0.4	0	3.0
41005*	sublingual, superficial	0.4	0	4.0
41006	sublingual, deep, supramylohyoid	BR	0	4.0

		Unit Value	Follow-up Days=	Basic Anes@
41007	submental space	BR	0	4.0
41008	submandibular space	BR	0	4.0
41009	masticator space	BR	0	4.0
41010	Incision of lingual frenum (frenotomy)	0.4	15	4.0
41015	Incision and drainage of extraoral abscess, cyst, or hematoma of floor of mouth; sublingual	0.6	15	4.0
41016	submental	BR		4.0
41017	submandibular	BR		4.0
41018	masticator space	BR		4.0
	(For frenoplasty, see 41520)			

EXCISION

41100	Biopsy of tongue, anterior two-thirds	1.0	15	3.0
41105	posterior one-third	0.6	15	3.0
41108	Biopsy, floor of mouth	1.0	15	4.0
41110	Excision lesion of tongue; without closure	BR		4.0
41112	with closure, anterior two-thirds	BR		4.0
41113	with closure, posterior one-third	BR		4.0
41114	with local tongue flap	BR		4.0
	(List 41114 in addition to code 41112 or 41113)			
41115	Excision of lingual frenum (frenectomy)	BR		4.0
41116	Excision lesion of floor of mouth	BR		4.0
41120	Glossectomy; less than one-half tongue	8.0	120	6.0
41130	Hemiglossectomy	12.0	120	6.0
41135	partial, with unilateral radical neck dissection	20.0	120	6.0
41140	complete or total, with or without tracheostomy, without radical neck dissection	18.0	120	6.0
41145	complete or total, with or without tracheostomy, with unilateral radical neck dissection	26.0	120	6.0
41150	composite procedure with resection floor of mouth and mandibular resection, without radical neck dissection	BR+		6.0
41153	composite procedure with resection floor of mouth, with suprahyoid neck dissection	BR	120	6.0
41155	composite procedure with resection floor of mouth, mandibular resection, and radical neck dissection (Commando type)	BR	120	6.0

REPAIR

41250*	Repair laceration up to 2 cm; floor of mouth and/or anterior two-thirds of tongue	1.0	0	4.0
41251*	posterior one-third of tongue	1.0	0	4.0
41252*	Repair laceration of tongue, floor of mouth, over 2 cm or complex	BR		4.0

OTHER PROCEDURES

41500	Fixation tongue, mechanical, other than suture (e.g., K-wire)	5.0	30	3.0
41510	Suture tongue to lip for micrognathia (Douglas type procedure)	10.0	30	3.0
41520	Frenoplasty (surgical revision of frenum, e.g., with Z-plasty)	BR		3.0
	(For frenotomy, see 40806, 41010)			
41599	Unlisted procedure, tongue, floor of mouth	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-150, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-150, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-150, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-150, filed 1/30/74; Order 68-7, § 296-22-150, filed 11/27/68, effective 1/1/69.]

DENTOALVEOLAR STRUCTURES

WAC 296-22-155 Teeth and gums.

		Unit Value	Follow-up Days=	Basic Anes@
	(For biopsy, see 11100)			

INCISION

*41800	Drainage abscess, cyst, hematoma	*0.4	0	3.0
41805	Removal embedded foreign body; from soft tissues	0.8	0	3.0
41806	from bone	2.0	0	3.0

EXCISION, DESTRUCTION

41820	Gingivectomy, excision gingiva, each quadrant	BR		3.0
41821	Operculectomy, excision pericoronal tissues	BR		3.0
41822	Excision fibrous tuberosities	BR		3.0
41823	Excision osseous tuberosities	BR		3.0
41825	Excision of lesion or tumor (except listed above); without repair	BR		3.0
41826	with simple repair	BR		3.0
41827	with complex repair	BR		3.0
	(For nonexcisional destruction, see 41850)			
41828	Excision of hyperplastic alveolar mucosa, each sextant or quadrant (specify)	BR		3.0
41830	Alveolectomy, including curettage of osteitis or sequestrectomy	BR		3.0
41850	Destruction of lesion (except excision)	BR		3.0

OTHER PROCEDURES

41870	Periodontal mucosal grafting	BR		3.0
41872	Gingivoplasty	BR		3.0
41874	Alveoplasty	BR		3.0
	(For closure of lacerations, see 40830, 40831)			
	(For segmental osteotomy, see 21202, 21206)			
	(For reduction of fractures, see 21420-21490)			

		Unit Value	Follow-up Days=	Basic Anes@
41899	Unlisted procedure, dentoalveolar structures	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-155, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-155, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-155, filed 1/30/74; Order 68-7, § 296-22-155, filed 11/27/68, effective 1/1/69.]

WAC 296-22-160 Palate, uvula.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*42000	Drainage of abscess of palate, uvula	*0.4	0	3.0
	EXCISION, DESTRUCTION			
42100	Biopsy of palate, uvula	0.6	7	3.0
42104	Excision lesion of palate, uvula; without closure	BR		3.0
42106	with closure	BR		3.0
42107	with local flap closure	BR		3.0
	(For skin graft, see 14040-14300)			
	(For mucosal graft, see 40818)			
	(For excision of local lesion of palate, see 11440-11442, 11640-11660)			
	(For graft or flap closure, see 14040-14300, 15050, 15120, 15240, 15510-15720)			
42120	Resection of palate or extensive excision of lesion	BR+		6.0
	(For reconstruction of palate with extraoral tissue, see 14040-14300, 15050, 15120, 15240, 15510-15720)			
*42140	Uvulectomy: excision of uvula	*0.6	0	3.0
42150	Removal exostosis bony palate	BR		3.0
42160	Destruction of lesion, palate or uvula (thermal, cryo or chemical)	BR		3.0
	REPAIR			
42180	Repair laceration of palate; up to 2 cm	BR		
42182	over 2 cm or complex	BR		
42200	Palatoplasty for cleft palate, soft and/or hard palate only	16.0	90	6.0
42205	Palatoplasty for cleft palate, with closure of alveolar ridge; soft tissue only	20.0	90	6.0
42210	with bone graft to alveolar ridge	22.0	90	6.0
	(For obtaining bone graft by second surgeon, see WAC 296-22-010, item 5c and modifier -64)			
42215	Palatoplasty for cleft palate; major revision	16.0	90	6.0
42220	secondary lengthening procedure	17.0	90	6.0
42225	attachment pharyngeal flap	17.0	90	6.0
42226	Lengthening of palate, and pharyngeal flap	BR	90	6.0
42227	Lengthening of palate, with island flap	BR	90	6.0
42235	Repair anterior palate, including vomer flap	16.0	90	6.0
42250	Repair oroantral or oronasal fistula, up to 1 cm	BR		4.0
	(For repair of larger defect, see 42215)			
42260	Repair nasolabial fistula	BR		4.0
42280	Maxillary impression for palatal prosthesis	BR		4.0
42281	Insertion of pin-retained palatal prosthesis	BR		4.0
	(For repair cleft lip, see 40700 et seq.)			
	OTHER PROCEDURES			
42299	Unlisted procedure, palate, uvula	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-160, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-160, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-160, filed 1/30/74; Order 68-7, § 296-22-160, filed 11/27/68, effective 1/1/69.]

WAC 296-22-165 Salivary glands and ducts.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*42300	Drainage abscess; parotid, simple	*1.4	0	3.0
42305	parotid, complicated	BR+		3.0
*42310	submaxillary or sublingual, intraoral	*1.0	0	3.0
42320	submaxillary, external	3.0	0	3.0
42325	Fistulization sublingual salivary cyst (ranula);	BR		3.0
42326	with prosthesis	BR		
*42330	Sialolithotomy; submandibular (submaxillary), sublingual, or parotid, uncomplicated, intraoral	*0.6	0	3.0
42335	submandibular (submaxillary) or sublingual, complicated	2.4	30	3.0
42340	parotid, extraoral or complicated intraoral	6.0	30	3.0
	EXCISION			
*42400	Biopsy salivary gland; needle	*0.8	0	
42405	incisional	2.0	30	3.0
42408	Excision sublingual salivary cyst (ranula)	BR		3.0
42409	Marsupialization sublingual salivary cyst (ranula)	BR		3.0
	(For fistulization of sublingual salivary cyst, see 42325)			
42410	Excision of parotid tumor or parotid gland; lateral lobe, without nerve dissection	6.0	60	3.0
42415	lateral lobe, with dissection and preservation of facial nerve	14.5	60	3.0

		Unit Value	Follow-up Days=	Basic Anes@
42420	total, with dissection and preservation of facial nerve	18.0	60	3.0
42425	total, en bloc removal with sacrifice of facial nerve	12.0	60	3.0
42426	total, with unilateral radical neck dissection	25.0	60	3.0
42440	Excision submandibular (submaxillary) gland	10.0	60	3.0
42450	Excision sublingual gland	5.5	60	3.0
REPAIR				
42500	Plastic repair salivary duct, (sialodochoplasty); primary or simple	7.0	60	3.0
42505	secondary or complicated	BR+		3.0
42507	Parotid duct diversion, bilateral (Wilke type procedure);	BR		3.0
42508	with excision of one submandibular gland	BR		3.0
42509	with excision of both submandibular glands	BR		3.0
42510	with ligation of both submandibular (Wharton's) ducts	BR		3.0
OTHER PROCEDURES				
42550	Injection procedure for sialography	0.4	0	
42600	Closure salivary fistula	BR+		3.0
*42650	Dilation salivary duct	*0.3	0	3.0
42660*	Dilation and catheterization of salivary duct, with or without injection	.5		3.0
42665	Ligation salivary duct, intraoral	BR		3.0
42699	Unlisted procedure, salivary glands or ducts	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-165, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-165, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-165, filed 1/30/74; Order 68-7, § 296-22-165, filed 11/27/68, effective 1/1/69.]

WAC 296-22-170 Pharynx, adenoids and tonsils.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*42700	Incision and drainage abscess; peritonsillar	*0.6	0	3.0
42720	retropharyngeal or parapharyngeal, intraoral approach	2.4	15	3.0
42725	retropharyngeal or parapharangeal, external approach	BR		3.0
EXCISION				
42800	Biopsy; oropharynx	0.8	7	3.0
42802	hypopharynx	1.4	7	3.0
42804	nasopharynx, visible lesion, simple	1.0	7	3.0
42806	nasopharynx, survey for unknown primary lesion	BR		3.0
	(For laryngoscopic biopsy, see 31510, 31535, 31536)			
42808	Excision of lesion of pharynx	BR		3.0
42809	Removal of foreign body from pharynx	BR		3.0
42810	Excision branchial cleft cyst or vestige; confined to skin and subcutaneous tissues	4.0	30	3.0
42815	extending beneath subcutaneous tissues	10.0	30	3.0
42820	Tonsillectomy and ademoidectomy; under age 12 years	4.0	30	3.0
42821	age 12 or over	4.8	30	3.0
42825	Tonsillectomy, primary or secondary; under age 12	3.5	30	3.0
42826	age 12 or over	4.0	30	3.0
42830	Adenoidectomy, primary; under age 12	2.8	30	3.0
42831	age 12 or over	3.0	30	3.0
42835	Adenoidectomy, secondary; under age 12	2.8	30	3.0
42836	age 12 or over	3.0	30	3.0
42842	Radical resection of tonsil, tonsillar pillars, and/or retromolar trigone; without closure	BR		3.0
42844	closure with local flap (e.g., tongue, buccal)	BR		3.0
42845	closure with other flap	BR		3.0
	(For closure with other flap(s), use appropriate number for flap(s))			
	(When combined with radical neck dissection, use also 38720, 38721)			
42860	Excision of tonsil tags	2.8	30	3.0
42870	Excision lingual tonsil (separate procedure)	4.8	30	3.0
42880	Excision of nasopharyngeal lesion (e.g., fibroma)	BR		3.0
	(For excision and repair of hypopharyngeal diverticulum, cervical approach, see 43130; for endoscopic approach, see 43225)			
42890	Limited pharyngectomy; without radical neck dissection	BR		3.0
	(42895 Limited pharyngectomy with radical neck dissection has been deleted. To report, use also 38720 or 38721 with 42890)			
42892	Resection of lateral pharyngeal wall or pyriform sinus, direct closure by advancement of lateral and posterior pharyngeal walls	BR		3.0
	(When combined with radical neck dissection, use also 38720, 38721)			
42894	Resection of pharyngeal wall requiring closure with myocutaneous flap	BR		3.0
	(When combined with radical neck dissection, use also 38720, 39721)			
REPAIR				
42900	Suture pharynx for wound or injury	BR		3.0
42950	Pharyngoplasty (plastic or reconstructive operation on pharynx)	BR		3.0
	(For pharyngeal flap, see 42225)			

		Unit Value	Follow-up Days=	Basic Anes@
42953	Pharyngoesophageal repair	BR		3.0
	(For closure with myocutaneous or other flap, use appropriate number in addition)			
OTHER PROCEDURES				
42955	Pharyngostomy (fistulization of pharynx, external for feeding)	BR		
42960	Control oropharyngeal hemorrhage (primary or secondary, e.g., posttonsillectomy); simple	1.0	0	4.0
42961	complicated, requiring hospitalization	BR		4.0
42962	with secondary surgical intervention	BR		4.0
42970	Control of nasopharyngeal hemorrhage (primary or secondary, eg, postadenoidectomy); simple, with posterior nasal packs, with or without anterior packs and/or cauterization	2.0	0	4.0
42971	complicated, requiring hospitalization	BR		4.0
42972	with secondary surgical intervention	BR		4.0
42999	Unlisted procedure, pharynx, adenoids, or tonsils	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-170, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-170, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-170, filed 1/30/74; Order 68-7, § 296-22-170, filed 11/27/68, effective 1/1/69.]

WAC 296-22-180 Esophagus.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
43000	Esophagotomy, cervical approach; without removal foreign body	14.0	90	6.0
43020	with removal of foreign body	14.0	90	6.0
43030	Cricopharyngeal myotomy	14.0	90	6.0
43040	Esophagotomy, thoracic approach; without removal of foreign body	19.0	90	12.0
43045	with removal foreign body	19.0	90	12.0
EXCISION				
43100	Excision of local lesion, esophagus, with primary repair; cervical approach	19.0	90	12.0
43101	thoracic approach	20.0	90	12.0
43105	Wide excision of malignant lesion of cervical esophagus, with or without laryngectomy;	BR		12.0
43106	with radical neck dissection (Wookey type procedure)	BR		12.0
43110	Esophagectomy: (at upper two-thirds level) and gastric anastomosis; with or without pyloroplasty	30.0	90	12.0
43111	with second stage pyloroplasty	35.0	90	12.0
43115	Esophagectomy (at upper two-thirds level) with segment replacement of bowel	40.0	90	12.0
43120	Esophagogastrectomy (lower-third), combined thoracicoabdominal with or without pyloroplasty	29.0	90	12.0
43130	Diverticulectomy hypopharynx or esophagus, with or without myotomy; cervical approach	14.0	90	6.0
43135	thoracic approach	20.0	90	12.0
43136	Diverticulopexy, hypopharynx, with or without myotomy	BR		6.0
	(For endoscopic approach, see 43225)			
ENDOSCOPY				
43200	Esophagoscopy, rigid or flexible fiberoptic (specify); diagnostic procedure	4.0	15	3.0
43202	for biopsy and/or collection of specimen by brushing or washing for cytology	4.8	15	3.0
43204	for injection sclerosis of esophageal varices	5.0	15	3.0
43215	for foreign body removal	6.0	15	3.0
	(For removal of foreign body with use of catheter see 74235)			
43217	for removal of polyp(s)	6.0	15	3.0
	(43218 Esophagoscopy with irrigation has been deleted. To report, use 43499)			
43219	for insertion of plastic tube or stent	4.8	15	3.0
43220	for dilation, direct	4.8	15	3.0
	(For dilation, without visualization, see 43450-43456)			
	(43221 has been deleted. To report, use 43200 or 43235)			
	(43222 has been deleted. To report, use 43202 or 43239)			
	(43223 has been deleted. To report, use 43215 or 43247)			
	(43224 has been deleted. To report, use 43217 or 43251)			
	(43225 Dohlman procedure has been deleted. To report, use 43499)			
43226	with insertion of wire to guide dilation	4.0	15	3.0
43227	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	5.0	15	3.0
43228	for ablation of tumor or mucosal lesion	5.0	15	3.0
	(For gastroscopy, without esophagoscopy, see 43700-43714)			
43234	Uppergastrointestinal endoscopy, simple primary examination (e.g., with small diameter flexible fiberscope)	BR		3.0
43235	Upper gastrointestinal endoscopy including esophagus, stomach, and either the duodenum and/or jejunum as appropriate; complex diagnostic	5.0	15	3.0
43239	for biopsy and/or collection of			

		Unit Value	Follow-up Days=	Basic Anes@
	specimen by brushing or washing for cytology	4.0	15	3.0
43245	for dilation of gastric outlet for obstruction	BR		3.0
43246	for directed placement of percutaneous gastrostomy tube	BR		3.0
43247	for removal of foreign body	5.0	15	3.0
43251	for removal of polyp(s)	6.0	15	3.0
43255	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	5.0	15	3.0
43258	for ablation of tumor or mucosal lesion (e.g., laser)	5.0	15	3.0
43260	Endoscopic retrograde cholangiopancreatography (ERCP), with or without specimen collection;	5.0	15	3.0
43262	for sphincterotomy papillotomy	6.0	15	3.0
43263	for pressure measurement of sphincter of Oddi	8.7	15	3.0
43264	for extraction of stone(s) from biliary and/or pancreatic ducts	7.0	15	3.0
43267	for insertion of Nasobiliary or nasopancreatic drainage tube			
	(when done with sphincterotomy, also use 43262)			
43268	for insertion of tube or stent into bile or pancreatic duct	BR		3.0
	(when done with sphincterotomy, also use 43262)			
43271	for balloon dilation of ampulla, biliary or pancreatic duct	BR		3.0
43272	for ablation of tumor or mucosal lesion (e.g., laser)	BR		3.0
	(For fluoroscopic monitoring and radiography, see 74330)			
REPAIR				
43300	Esophagoplasty; (plastic repair or reconstruction) cervical approach; without repair of tracheoesophageal fistula	BR		12.0
43305	with repair of tracheoesophageeal fistula	22.0	90	6.0
43310	Esophagoplasty, (plastic repair or reconstruction) thoracic approach; without repair of trachioesophageal fistula	30.0	90	12.0
43312	with repair of tracheoesophageal fistula	26.0	90	12.0
43320	Esophagogastrostomy (cardioplasty) with or without vagotomy and pyloroplasty; abdominal approach	22.0	90	6.0
43321	thoracic approach	22.0	90	11.0
43324	Esophagogastric fundoplasty (e.g., Nissen, Belsey IV, Hill procedures)	BR		6.0
43325	Esophagogastric fundoplasty with fundic patch (Thal-Nissen procedure)	BR		6.0
	(For cricopharyngeal myotomy, see 43030)			
43330	Esophagomyotomy (Heller type) with or without hiatal hernia repair); abdominal approach	19.0	90	6.0
43331	thoracic approach	19.0	90	11.0
	(For esophagoduodenostomy or esophagojejunostomy with total gastric resection, see 43620)			
43340	Esophagojejunostomy (without total gastrectomy); abdominal approach	24.0	90	6.0
43341	thoracic approach	24.0	90	11.0
43350	Esophagostomy, fistulization of esophagus, external; abdominal approach	14.0	90	6.0
43351	thoracic approach	14.0	90	11.0
43352	cervical approach	14.0	90	14.0
SUTURE				
43400	Ligation, direct, esophageal varices	20.0	90	12.0
43410	Suture esophageal wound or injury; cervical approach	BR		7.0
43415	thoracic approach	19.0	90	12.0
43420	Closure esophagostomy or fistula; cervical approach	14.0	90	6.0
43425	thoracic approach	26.0	90	12.0
	(For repair of esophageal hiatal hernia, see 39500 et seq.)			
MANIPULATION				
*43450	Dilation esophagus, by unguided sound(s) or bougie(s) indirect; initial session	*0.6	0	3.0
*43451	subsequent session	*0.6	0	3.0
43453	Dilation esophagus, over guide wire or string	3.0	15	3.0
	(For dilation with direct visualization, see 43220)			
43455	Brusque esophageal dilation by balloon or Stark dilator;	4.0	15	3.0
43456	retrograde	BR		3.0
43460	Esophagogastric tamponade, with balloon (Sengstaaken type)	Sv.&		
43499	Unlisted procedure, esophagus	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-180, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-180, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-180, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-180, filed 1/30/74; Order 68-7, § 296-22-180, filed 11/27/68, effective 1/1/69.]

WAC 296-22-190 Stomach.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
43500	Gastrotomy; with exploration or foreign body removal	12.0	45	5.0
43510	with esophageal dilation and insertion of plastic tubes	BR		5.0
43520	Pyloromyotomy, cutting of pyloric muscle (Fredet-Ramstedt type operation)	10.0	45	6.0
EXCISION				
43600	Biopsy of stomach; by capsule, tube, peroral (one or more specimens)	3.0	0	

		Unit Value	Follow-up Days=	Basic Anes@
43605	by laparotomy	12.0	45	5.0
43610	Local excision of ulcer or tumor.	14.5	45	6.0
43620	Gastrectomy, total; including intestinal anastomosis	28.0	90	7.0
43625	with repair by intestinal transplant	34.0	90	7.0
43630	Hemigastrectomy or distal subtotal gastrectomy including pyloroplasty, gastroduodenostomy or gastrojejunostomy; without vagotomy	19.0	60	6.0
43635	with vagotomy, any type	21.0	60	6.0
43638	Hemigastrectomy or proximal subtotal gastrectomy, thoracic or abdominal approach	19.0	60	6.0
43640	Vagotomy and pyloroplasty, with or without gastrostomy	17.0	60	6.0
	(For pyloroplasty, see 43800)			
	(For vagotomy, see 64752–64760)			

ENDOSCOPY

	(For upper gastrointestinal endoscopy, see 43234–43258)			
	(43700 has been deleted. To report, use 43235)			
	(43702 has been deleted. To report, use 43239)			
	(43709 has been deleted. To report, use 43247)			
	(43711 has been deleted. To report, use 43251)			
	(43712 has been deleted. To report, use 43255)			
	(43714 has been deleted. To report, use 43258)			
	(For esophagogastroduodenoscopy, see 43235–43264)			

INTRODUCTION

*43760	Change of gastrostomy tube; simple	BR		5.0
*43765	complicated	BR		5.0

SUTURE

43800	Pyloroplasty	13.0	45	5.0
	(For pyloroplasty and vagotomy, see 43640)			
43810	Gastroduodenostomy	14.0	45	5.0
43820	Gastrojejunostomy	14.0	45	5.0
43825	with vagotomy any type	18.0	45	6.0
43830	Gastrostomy, temporary (tube, rubber, or plastic) (separate procedure);	13.0	45	5.0
43831	neonatal, for feeding	8.0	30	5.0
	(For change of gastrostomy tube, see 43760–43765)			
43832	Gastrostomy, permanent, with construction of gastric tube	16.0	45	5.0
43834	Gastrostomy endoscopic percutaneous	BR		5.0
43840	Gastrorrhaphy, suture of perforated duodenal or gastric ulcer, wound, or injury	13.0	45	6.0
43844	Gastric bypass for morbid obesity noncovered procedure			
43845	Gastric stapling for morbid obesity noncovered procedure			
43846	Gastric bypass with Roux-en-Y gastroenterostomy for morbid obesity noncovered procedure			
43850	Revision of gastroduodenal anastomosis (gastroduodenostomy) with reconstruction, without vagotomy	20.0	60	5.0
43855	with vagotomy	23.0	60	6.0
43860	Revision of gastrojejunal anastomosis (gastrojejunostomy) with reconstruction; without vagotomy	20.0	60	5.0
43865	with vagotomy	23.0	60	6.0
43870	Closure of gastrostomy, surgical.	12.0	45	5.0
43880	Closure of gastrocolic fistula	BR		5.0
43885	Anterior gastropexy for hiatal hernia (separate procedure)	BR		5.0
43999	Unlisted procedure, stomach	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-190, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-190, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-190, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-190, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-190, filed 1/30/74; Order 68-7, § 296-22-190, filed 11/27/68, effective 1/1/69.]

WAC 296-22-195 Intestines (except rectum).

		Unit Value	Follow-up Days=	Basic Anes@

INCISION

44000	Enterolysis (freeing of intestinal adhesion); (separate procedure)	10.0	45	4.0
	(For incidental enterolysis, see WAC 296-22-010, item 7b)			
44005	with acute bowel obstruction	14.5	90	6.0
44010	Duodenotomy	14.5	60	7.0
44015	Needle catheter jejunostomy for enteral hyperalimentation (list separately in addition to primary procedure)	BR		4.0
44020	Enterotomy with exploration or foreign body removal; small bowel, other than duodenum	14.5	60	4.0
44025	large bowel	15.0	60	4.0
44040	Exteriorization of intestine (Mikulicz resection with crushing of spur)	18.0	60	5.0
44050	Reduction of volvulus, intussusception, internal hernia, by laparotomy	14.0	90	5.0
44060	Sigmoid myotomy (Reilly type operation) for diverticular disease	BR	90	6.0

EXCISION

44100	Biopsy of intestine by capsule, tube, peroral (one or more specimens)	3.0	0	
44110	Excision of one or more lesions of small or large bowel not requiring anastomosis, exteriorization, or fistulization; single enterotomy	16.0	60	4.0

		Unit Value	Follow-up Days=	Basic Anes@
44111	multiple enterotomies	BR		4.0
44115	Excision colonic diverticulum	BR		
44120	Enterectomy, resection of small intestine; with anastomosis	17.0	60	6.0
44125	with double-barrel enterostomy	14.0	60	6.0
44130	Enteroenterostomy, anastomosis of intestine; (separate procedure)	14.5	90	5.0
44131	intestinal bypass for morbid obesity noncovered procedure			
44140	Colectomy, partial; with anastomosis	18.0	90	5.0
44141	with skin level cecostomy or colostomy	20.0	90	6.0
44143	with end colostomy and closure of distal segment (Hartmann type procedure)	18.0	90	6.0
44144	with resection, with colostomy or ileostomy and creation of mucofistula	18.0	90	6.0
44145	with coloproctostomy (low pelvic anastomosis)	24.0	90	6.0
44146	with coloproctostomy (low pelvic anastomosis) with colostomy	26.0	90	6.0
44150	Colectomy, total, abdominal, with ileostomy or ileoproctostomy; with proctectomy	26.0	90	6.0
44155	with proctectomy and ileostomy	30.0	90	6.0
44160	Colectomy with removal of terminal ileum and ileocolostomy	30.0	90	6.0

ENTEROSTOMY—EXTERNAL FISTULIZATION OF INTESTINES (SEPARATE PROCEDURE)

44300	Enterostomy, tube, or cecostomy	8.5	90	4.0
44305	in conjunction with other procedures	2.0	90	
44308	Enterostomy, suture of one wall of intestine to abdominal wall, small or large intestine	10.0	90	5.0
44310	Ileostomy	14.5	90	4.0
44312	Revision of ileostomy; simple (release of superficial scar)	BR		4.0
44314	complicated (reconstruction in depth)	BR		4.0
44316	Continent ileostomy (Koch procedure)	BR		4.0
	(For fiberoptic evaluation, see 44385)			
44320	Colostomy or skin level cecostomy (separate procedure)	12.0	90	4.0
44340	Revision of colostomy, simple (release of superficial scar)	1.2	90	
44345	complicated (reconstruction in depth)	6.0	60	4.0

ENDOSCOPY, SMALL BOWEL AND STOMAL

	(For upper gastrointestinal endoscopy, see 43234–43258)			
44360	Small intestinal endoscopy, enteroscopy beyond second portion of duodenum; diagnostic	3.0	7	3.0
44361	for biopsy and/or collection of specimen by brushing or washing for cytology	2.0	7	3.0
44363	with removal of foreign body	BR	7	3.0
44364	with removal of polyps	3.0	7	3.0
44366	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	BR		3.0
44369	for ablation of tumor or mucosal lesion (e.g., laser)	2.0	7	3.0
	(44375 has been deleted. To report, use 43235)			
44380	Fiberoptic ileoscopy through stoma;	4.0	7	3.0
44382	with biopsy and/or collection of specimen by brushing or washing	3.0	7	3.0
44385	Fiberoptic evaluation of small intestinal (kock) or pelvic pouch;	3.0	7	3.0
44386	for biopsy and/or collection of specimen by brushing or washing	BR		3.0
44388	Fiberoptic colonoscopy through colostomy	3.0	7	3.0
44389	with biopsy and/or collection of specimen by brushing or washing	2.5		3.0
44390	with removal of foreign body	3.5		3.0
44391	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	3.5		3.0
44392	with removal of polypoid lesion(s)	3.5		3.0
44393	for ablation of tumor or mucosal lesion (e.g., laser)	BR		3.0
	(For colonoscopy per rectum, see 45360–45386)			

REPAIR

44400	Cecopexy, fixation of cecum to abdominal wall	12.0	90	4.0
44405	Sigmoidopexy, fixation of sigmoid colon to abdominal wall	12.0	90	4.0

SUTURE

44600	Suture of intestine (enterorrhaphy), large or small, for perforated ulcer, diverticulum, wound, injury or rupture; single	14.0	45	7.0
44605	with colostomy	16.0	90	7.0
44610	multiple	BR		7.0
44620	Closure of enterostomy, large or small intestine;	10.0	90	5.0
44625	with resection and anastomosis	14.0	90	6.0
44640	Closure of intestinal cutaneous fistula	BR		4.0
44650	Closure of enteroenteric or enterocolic fistula	14.0	90	5.0
44660	Closure of enterovesical fistula; without intestinal or bladder resection	14.0	90	5.0
	(For closure of renocolic fistula, see 50525, 50526)			
44661	with bowel and/or bladder resection	BR		5.0
	(For closure of gastrocolic fistula, see 43880)			
	(For closure of rectovesical fistula, see 45800–45805)			

		Unit Value	Follow-up Days=	Basic Anes@
44680	Intestinal plication, complete (Noble type operation) (separate procedure)	20.0	90	6.0
44799	Unlisted procedure, intestine	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-195, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-195, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-195, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-195, filed 1/30/74; Order 68-7, § 296-22-195, filed 11/27/68, effective 1/1/69.]

WAC 296-22-200 Meckel's diverticulum and the mesentery.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
44800	Excision of Meckel's diverticulum (diverticulectomy) or omphalomesenteric duct	10.0	45	4.0
44820	Excision of lesion of mesentery (separate procedure) (with bowel resection, see 44120 or 44140 et seq.)	BR		4.0
	SUTURE			
44850	Suture of mesentery (separate procedure)	13.0	45	4.0
	(For reduction and repair of internal hernia, see 44050)			
44899	Unlisted procedure, Meckel's diverticulum and the mesentery	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-200, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-200, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-200, filed 1/30/74; Order 68-7, § 296-22-200, filed 11/27/68, effective 1/1/69.]

WAC 296-22-205 Appendix.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
44900	Incision and drainage of appendiceal abscess, transabdominal	7.0	45	4.0
	EXCISION			
44950	Appendectomy;	9.5	45	4.0
	(For incidental appendectomy, see WAC 296-22-010, item 7b and modifier -52)			
44955	when done for indicated purpose at time of other major procedure (not as separate procedure)	6.0	45	4.0
44960	for ruptured appendix with abscess or generalized peritonitis	BR		4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-205, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-205, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-205, filed 1/30/74; Order 68-7, § 296-22-205, filed 11/27/68, effective 1/1/69.]

WAC 296-22-210 Rectum.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
45000	Transrectal drainage of pelvic abscess	3.0	15	3.0
45005	Incision and drainage of submucous abscess, rectum	4.5	30	3.0
45020	Incision and drainage of deep supralevator, pelvirectal or retrorectal abscess (see also 46050, 46060)	4.8	30	3.0
	EXCISION			
45100	Biopsy of anorectal wall, anal approach (e.g., congenital megacolon); incisional	4.0	15	3.0
45105	full thickness	6.0	30	3.0
	(For endoscopic biopsy, see 45305)			
45108	Anorectal myomectomy	BR		3.0
45110	Proctectomy; complete, combined abdominoperineal, with colostomy, one or two stages	26.0	90	7.0
45111	partial resection of rectum	24.0	90	7.0
45112	Proctectomy, combined abdominoperineal, pull-through procedure, one or two stages	28.0	90	7.0
45114	Proctectomy, partial, with anastomosis; abdominal and transacral approach, one or two stages	30.0	90	7.0
45116	transacral approach only (Kraske type)	28.0	90	7.0
45120	Proctectomy, complete, for congenital megacolon (Swenson Duhamel, or Soave type operation)	26.0	90	7.0
45130	Excision of rectal procidentia, with anastomosis; perineal approach	14.5	90	4.0
45135	abdominal and perineal approach	26.0	90	6.0
45150	Division of stricture of rectum	BR		3.0
45160	Excision of rectal tumor by proctotomy, transacral or transcoccygeal approach	19.0	90	3.0
45170	Excision of rectal tumor, simple, transanal approach	BR		3.0
45180	Excision and/or electrodesiccation of malignant tumor of rectum, transanal approach; palliative	BR		3.0
45181	therapeutic	BR		3.0
	ENDOSCOPY			
45300	Proctosigmoidoscopy; diagnostic (separate procedures)	0.6	0	3.0
45302	for collection of specimen by brushing or washing for cytology	1.0	7	3.0
45303	for dilation, direct, instrumental	1.5	7	3.0
45305	for biopsy,	1.2	7	3.0

		Unit Value	Follow-up Days=	Basic Anes@
45307	for removal of foreign body ..	1.0	7	3.0
45310	for removal of polyp or papilloma	1.4	7	3.0
45315	with removal of multiple excrescences, papillomata or polyps	1.8	7	3.0
45317	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	2.0	7	3.0
	(45319 Endoscopic retrograde lavage has been deleted. To report, use 45999)			
45321	for decompression of volvulus .	BR		3.0
	(45325 colonoscopy has been renumbered 45355 without change in terminology)			
45330	Sigmoidoscopy, flexible fiberoptic; diagnostic	0.8	15	3.0
45331	for biopsy and/or collection of specimen by brushing or washing	1.4	15	3.0
45332	for removal of foreign body ..	1.4	15	3.0
45333	with removal of polyp(s)	1.8	15	3.0
45334	for control of hemorrhage (e.g., electrocoagulation, laser photocoagulation)	BR		
45336	for ablation of tumor or mucosal lesion (e.g., laser) ...	BR		3.0
45355	Colonoscopy, with standard sigmoidoscope, transabdominal via colotomy, single or multiple .	3.0	7	3.0
45360	Colonoscopy, fiberoptic, beyond 25 cm to splenic flexure; diagnostic procedure	5.0	7	3.0
45365	for biopsy and/or collection of specimen by brushing or washing	4.0	7	3.0
45367	with removal of foreign body .	5.0	7	3.0
45368	for control of hemorrhage (e.g., electrocoagulation)	6.0	7	3.0
45369	for ablation of tumor or mucosal lesion (e.g., laser) ...	BR		3.0
45370	with removal of polypoid lesion(s)	6.0	7	3.0
	(45371 Colonoscopic retrograde lavage has been deleted. To report, use 44799)			
45372	for decompression of volvulus .	BR		3.0
45378	Colonoscopy, fiberoptic, beyond splenic flexure; diagnostic procedure	6.0	7	3.0
45379	with removal of foreign body .	7.0	7	3.0
45380	with biopsy and/or collection of specimen for cytology	6.0	7	3.0
45382	for control of hemorrhage	7.0	7	3.0
45383	for ablation of tumor or mucosal lesion (e.g., laser) ...	BR		3.0
45385	for removal of polypoid lesion(s)	7.0	7	3.0
	(45386 Colonoscopic retrograde lavage has been deleted. To report, use 44799)			
	(For small bowel and stomal endoscopy, see 44360–44393)			
REPAIR				
45500	Proctoplasty, for stenosis.....	10.0	90	3.0
45505	for prolapse of mucous membrane	11.0	90	3.0
45520	Perirectal injection of sclerosing solution for prolapse; office.....	1.0	0	
45521	hospital.....	4.0	30	3.0
45540	Proctopexy for prolapse, abdominal approach	18.0	90	4.0
45541	perineal approach	18.0	90	3.0
45550	proctopexy combined with sigmoid resection, abdominal approach.....	22.0	90	5.0
45560	Repair of rectocele (separate procedure)	24.0	90	5.0
	(For repair of rectocele with posterior colporrhaphy, see 57250)			
SUTURE				
45800	Closure of rectovesical fistula; ..	20.0	90	5.0
45805	with colostomy.....	22.0	90	5.0
45820	Closure of rectourethral fistula..	20.0	90	3.0
45825	with colostomy.....	22.0	90	4.0
	(For rectovaginal fistula closure, see 57300–57308)			
MANIPULATION				
*45900	Reduction of procidentia (separate procedure) under anesthesia	*0.6	0	3.0
45905*	Dilation of anal sphincter (separate procedure) under anesthesia other than local	BR		3.0
45910	Dilation of rectal stricture (separate procedure) under anesthesia other than local	BR		3.0
45915*	Removal of fecal impaction or foreign body (separate procedure) under anesthesia	BR		3.0
45999	Unlisted procedure, rectum.....	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-210, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-210, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-210, filed 1/30/74; Order 68-7, § 296-22-210, filed 11/27/68, effective 1/1/69.]

WAC 296-22-215 Anus.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*46000	Fistulotomy, subcutaneous	*0.6	0	3.0
	(For fistulectomy, see 46060, 46270–46285)			
*46030	Removal of seton, other marker .	*0.6	0	
46032	Undercutting for pruritus ani (modified Ball operation)	1.0	0	3.0
46040	Incision and drainage of ischiorectal and/or perirectal abscess (separate procedure)	2.4	15	3.0
46045	Incision and drainage of intramural, intramuscular or submucosal abscess, transanal, under anesthesia.....	2.4	15	3.0
*46050	Incision and drainage, perianal abscess, superficial (see also 45020, 46060)	*0.48	0	3.0
46060	Incision and drainage of ischiorectal or intramural abscess with fistulectomy, submuscular			

		Unit Value	Follow-up Days=	Basic Anes@
	(see also 45020)	9.5	90	3.0
46070	Incision, anal septum (infant)	1.2	0	3.0
	(For anoplasty, see 46700–46705)			
*46080	Sphincterotomy, anal, division of anal sphincter (separate procedure)	*1.2	0	3.0
46083	Incision of thrombosed hemorrhoid, external	BR		3.0
EXCISION				
46200	Fissurectomy, with or without sphincterotomy	4.8	90	3.0
46210	Cryptectomy, single	1.4	30	3.0
46211	multiple, (separate procedure)	7.0	90	3.0
46220	Papillectomy or excision of single tab, anus (separate procedure)	0.6	15	3.0
46221	Hemorrhoidectomy, by simple ligature (rubber band)	BR		3.0
46230	Excision of external hemorrhoid tags and/or multiple papillae, office	1.2	15	3.0
46250	Hemorrhoidectomy, external, complete	4.8	90	3.0
46255	Hemorrhoidectomy, internal and external, simple;	7.0	90	3.0
46257	with fissurectomy	BR		3.0
46258	with fistulectomy, with or without fissurectomy	BR		3.0
46260	Hemorrhoidectomy, internal and external, complex or extensive;	10.0	90	3.0
46261	with fissurectomy	BR		3.0
46262	with fistulectomy, with or without fissurectomy	BR		3.0
46270	Fistulectomy; subcutaneous	2.4	30	3.0
46275	submuscular	9.5	90	3.0
46280	complex or multiple	BR+		3.0
46285	second stage	2.0	30	3.0
*46320	Enucleation or excision of external thrombotic hemorrhoid	*0.72	0	3.0
INTRODUCTION				
*46500	Injection of sclerosing solution, hemorrhoids or mucosal prolapse	*0.4	0	3.0
46510*	Perianal injection of alcohol or other solution for pruritus ani	BR		3.0
46530	Dilation of anus and lower rectum under anesthesia for hemorrhoids (Lord procedure)	BR		3.0
ENDOSCOPY				
*46600	Anoscopy; diagnostic (separate procedure)	*0.32	0	3.0
46602	for collection of specimen by brushing or washing for cytology	0.5	0	3.0
46604	for dilation, direct, instrumental	0.7	0	3.0
46606	for biopsy	1.0	0	3.0
46608	for removal of foreign body	1.5	0	3.0
46610	for removal of polyp	1.5	0	3.0
46612	for multiple polyp removal	BR		3.0
46614	for control of hemorrhage	BR		3.0
REPAIR				
46700	Anoplasty, plastic operation for stricture; adult	9.0	90	3.0
46705	infant	10.0	30	4.0
	(For simple incision of anal septum, see 46070)			
46715	Repair of congenital anovaginal fistula ("cut–back" type procedure)	12.0	90	4.0
46716	Perineal transplant of anovaginal fistula	14.0	90	4.0
46730	Construction of anus for congenital absence; perineal or sacrococcygeal approach	16.0	90	5.0
46735	combined abdominal and perineal approach	20.0	90	7.0
46740	Construction of anus for congenital absence, with repair of urinary fistula	22.0	90	7.0
46750	Sphincteroplasty, anal, for incontinence, or prolapse; adult	10.0	90	3.0
46751	child	12.0	90	4.0
46753	Graft (Thiersch operation) for rectal incontinence and/or prolapse	BR		4.0
46754	Removal of Thiersch wire or suture	BR		4.0
46760	Sphinteroplasty, anal, for incontinence, adult, muscle transplant	BR		4.0
DESTRUCTION				
*46900	Chemosurgery of condylomata, anal, multiple, simple	*0.48	0	
*46910	Electrodesiccation of condylomata, anal, multiple, simple	*0.8	0	3.0
*46920	Excision and electrodesiccation of condylomata, anal; simple	*1.0	0	3.0
46930	extensive	BR		3.0
46932*	Cryosurgery of condylomata, anal; simple	BR		
46933	extensive	BR		
46934	Cryosurgery of hemorrhoids; internal	BR		
46935	external	BR		
46936	internal and external	BR		
46937	Cryosurgery of rectal tumor; benign	BR		
46938	malignant	BR		3.0
46940	Curettage or cauterization of anal fissure, including dilation of anal sphincter (separate procedure); initial	BR		3.0
46942	subsequent	BR		
SUTURE				
46945	Ligation of internal hemorrhoids; single procedure	BR		3.0
46946	multiple procedures	BR		3.0
OTHER PROCEDURES				
46999	Unlisted procedure, anus	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–22–215, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80–18–055 (Order 80–25), § 296–22–215, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–215, filed 1/30/74; Order 68–7, § 296–22–215, filed 11/27/68, effective 1/1/69.]

WAC 296-22-220 Liver.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*47000	Biopsy of liver, percutaneous needle	*1.4	0	3.0
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
47010	Hepatotomy for drainage of abscess or cyst, one or two stages	BR		3.0
EXCISION				
47100	Biopsy of liver, wedge (separate procedure)	10.0	45	4.0
47120	Hepatectomy, resection of liver; partial lobectomy	19.0	45	10.0
47125	total left lobectomy	BR		13.0
47130	total right lobectomy	BR		13.0
47135	total, with transplant	BR		15.0
REPAIR				
47300	Marsupialization of cyst or abscess of liver	14.5	60	6.0
SUTURE				
47350	Hepatorrhaphy, suture of liver wound or injury; simple	14.0	45	4.0
47355	with common duct or gallbladder drainage	18.0	45	7.0
47360	complex	BR		9.0
47399	Unlisted procedure, liver	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-220, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-220, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-220, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-220, filed 1/30/74; Order 68-7, § 296-22-220, filed 11/27/68, effective 1/1/69.]

WAC 296-22-225 Biliary tract.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
47400	Hepaticotomy or hepaticostomy with exploration, drainage, or removal of calculus	20.0	45	6.0
47420	Choledochotomy or choledochostomy with exploration, drainage, or removal of calculus, with or without cholecystotomy;	17.0	45	5.0
47425	with transduodenal sphincterttomy	19.0	45	6.0
47440	Duodenocholedochotomy, transduodenal sholedocholithotomy	19.0	45	6.0
47460	Transduodenal sphincterotomy or sphincteroplasty (separate procedure)	19.0	45	6.0
47480	Cholecystotomy or cholecystostomy with exploration, drainage or removal of calculus (separate procedure)	12.0	45	5.0
INTRODUCTION				
47500	Injection procedure for percutaneous transhepatic cholangiography	1.6	0	
47510	Introduction of percutaneous transhepatic catheter or stent for biliary drainage	BR		
ENDOSCOPY				
47550	Biliary endoscopy, intraoperative (choledochoscopy)	BR		5.0
	(Use 47550 with either 47420 or 47610)			
47552	Biliary endoscopy, percutaneous via T-tube or other tract; diagnostic	BR		5.0
47553	for biopsy and/or collection of specimen by brushing or washing	BR		5.0
47554	for removal of stone(s)	BR		5.0
47555	for dilation of biliary duct stricture	BR		5.0
	(For peroral biliary endoscopic procedure see 43260-43272)			
EXCISION				
47600	Cholecystectomy;	14.5	45	5.0
47605	with cholangiography	15.0	45	5.0
47610	Cholecystectomy with exploration of common duct	17.0	45	6.0
	(47611 has been deleted. To report, use 47610 with 47550)			
47620	with transduodenal sphincterotomy or sphinteropalsty [sphincteroplasty], with or without cholangiograpy	20.0	45	6.0
47630	Biliary duct stone extraction, percutaneous via t-tube tract (e.g., Burhenne technique)	BR		5.0
	(For fluoroscopic procedure, see 74327)			
47700	Exploration for congenital atresia of bile ducts, without repair, with or without liver biopsy, with or without cholangiography	14.5	45	6.0
REPAIR				
47720	Chloecystoenterostomy; direct	14.5	60	5.0
47721	with gastroenterostomy	16.0	60	6.0
47740	Roux-en-y	16.0	60	6.0
47760	Anastomosis, direct, of extrahepatic biliary ducts and gastrointestinal tract	20.0	90	6.0
47765	Anastomosis, direct, of intrahepatic ducts and gastrointestinal tract	BR		6.0
47780	Anastomosis, Roux-en-y of extrahepatic biliary ducts and gastrointestinal tract	22.0	90	6.0
47800	Reconstruction, plastic, of extrahepatic biliary ducts with end-to-end anastomosis	20.0	90	6.0
47810	Implantation of biliary istulous tract into stomach or intestine	BR		5.0
SUTURE				
47850	Choledochorrhaphy	BR		5.0
47855	Cholecystorrhaphy	BR		5.0
47999	Unlisted procedure, biliary tract.	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-225, filed 2/28/86, effective 4/1/86; 83-

16-066 (Order 83-23), § 296-22-225, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-225, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-225, filed 1/30/74; Order 68-7, § 296-22-225, filed 11/27/68, effective 1/1/69.]

WAC 296-22-230 Pancreas.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
48000	Drainage of abdomen for pancreatitis	13.0	60	5.0
48020	Removal of pancreatic calculus	20.0	60	6.0
	EXCISION			
48100	Biopsy of pancreas (separate procedure)	14.0	60	5.0
48102	Biopsy of pancreas, needle, percutaneous	2.5	7	
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
48120	Excision of lesion of pancreas (e.g., cyst, adenoma)	17.0	60	6.0
48140	Pancreatectomy, distal subtotal, with or without splenectomy;	20.0	60	6.0
48145	with pancreaticojejunostomy	22.0	60	6.0
48148	Excision of ampulla of Vater, simple	BR		6.0
48150	Pancreatectomy, proximal subtotal, with pancreaticojejunostomy or pancreaticoduodenostomy (Whipple type operation)	34.0	60	6.0
48151	Pancreatectomy, near-total, with preservation of duodenum (Child type procedure)	BR		
48155	Pancreatectomy, total;	34.0	60	6.0
48160	with transplantation	BR		6.0
48180	Pancreaticojejunostomy side-to-side anastomosis, Puestow type operation, (separate procedure)	24.0	60	6.0
	ENDOSCOPY			
	(For peroral pancreatic endoscopic procedures see 43260-43272)			
	REPAIR			
48500	Marsupialization of cyst of pancreas	14.5	60	6.0
48520	Internal anastomosis of pancreatic cyst to gastrointestinal tract; direct	17.0	60	6.0
48540	Roux-en-y	19.0	60	6.0
48999	Unlisted procedure, pancreas	BR		6.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-230, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-230, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-230, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-230, filed 1/30/74; Order 68-7, § 296-22-230, filed 11/27/68, effective 1/1/69.]

WAC 296-22-235 Abdomen, peritoneum and omentum.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
49000	Exploratory laparotomy, exploratory celiotomy (separate procedure) (see WAC 296-22-010, item 7b)	10.0	45	4.0
49002	Reopening of recent laparotomy incision for exploration; removal of hematoma, control of bleeding	10.0	45	4.0
49010	Exploration, retroperitoneal area (separate procedure)	10.0	45	5.0
49020	Drainage of peritoneal abscess or localized peritonitis, exclusive of appendiceal abscess, transabdominal	11.0	45	4.0
	(For appendiceal abscess, see 44900)			
49040	Drainage of subdiaphragmatic or subphrenic abscess	12.0	45	5.0
49060	Drainage of retroperitoneal abscess	11.0	45	5.0
*49080	Peritoneocentesis, abdominal paracentesis; initial	*0.8	0	
*49081	subsequent	*0.6	0	
49085	Removal of peritoneal foreign body	BR		3.0
	(For lysis of intestinal adhesions, see 44000)			
	EXCISION			
49180	Biopsy, abdominal or retroperitoneal mass, needle, percutaneous	2.5	7	
	(For CT guidance, see 76360, 76361, 76365, 76366; for ultrasonic guidance, see 76942, 76943)			
49200	Excision of intra-abdominal or retroperitoneal tumors or cysts or endometriomas	14.0	60	5.0
49201	extensive	BR		5.0
49220	Staging celiotomy (laparotomy) for Hodgkin's disease or lymphoma (includes splenectomy, needle or open biopsies of both liver lobes, possibly also removal of abdominal nodes, abdominal node and/or bone marrow biopsies, ovarian repositioning)	BR	45	5.0
49250	Umbilectomy, omphalectomy, excision of umbilicus (separate procedure)	BR		5.0
49255	Omentectomy, epiploectomy, resection of omentum (separate procedure)	BR		5.0
	ENDOSCOPY			
49300	Peritoneoscopy; without biopsy	4.0	15	3.0
49301	with biopsy	6.0	10	5.0
49302	Peritoneoscopy with guided transhepatic cholangiography; without biopsy	7.0	10	5.0
49303	with biopsy	8.0	10	5.0
	(For sterilization by laparoscopic technique, see 58982)			

		Unit Value	Follow-up Days=	Basic Anes@
INTRODUCTION				
*49400	Pneumoperitoneum; initial	*1.0	0	3.0
*49401	subsequent	*0.6	0	3.0
*49420	Insertion of intraperitoneal cannula or catheter for drainage or dialysis; temporary	*1.0	0	3.0
49421	permanent	BR		3.0
49425	Peritoneal-venous shunt (e.g., LeVeen shunt)	BR		3.0
	(For shunt patency test, see 78291)			
49430	Injection procedure for retroperitoneal pneumography	2.4	0	
49440	Injection procedure for pelvic pneumography	0.8	0	
REPAIR				
HERNIOPLASTY, HERNIORRHAPHY, HERNIOTOMY				
	(For bilateral herniorrhaphy or with bowel resection, see WAC 296-22-010, item 7)			
	(For reduction and repair of intra-abdominal hernia, see 44050)			
	(For debridement of abdominal wall, see 11042, 11043)			
	(All codes for bilateral procedures in hernia repair have been deleted. To report, add modifier -50)			
49500	Repair inguinal hernia, under age 5 years, with or without hydrocelectomy; unilateral	7.0	45	3.0
49505	Repair inguinal hernia, age 5 or over; unilateral	9.0	45	3.0
49510	Repair of inguinal hernia, age 5 or over; unilateral, with orchiectomy, with or without implantation of prosthesis	9.5	45	3.0
49515	with excision of hydrocele or spermatocele	9.5	45	3.0
49520	recurrent	10.0	45	3.0
49525	sliding	10.0	45	3.0
49530	incarcerated	12.0	45	3.0
49535	strangulated	12.0	45	3.0
49540	Repair lumbar hernia	10.0	45	3.0
49550	Repair femoral hernia, groin incision; unilateral	9.0	45	3.0
49552	Repair femoral hernia, Henry approach; unilateral	10.0	45	3.0
49555	Repair femoral hernia, recurrent, any approach	10.0	45	3.0
49560	Repair ventral hernia (separate procedure);	11.0	45	3.0
49565	recurrent	12.0	45	3.0
49570	Repair epigastric hernia, properitomeal fat (separate procedure); simple	3.0	45	3.0
49575	complex	7.0	45	3.0
49580	Repair umbilical hernia; under age 5 years	7.0	45	3.0
49581	age 5 or over	8.5	45	3.0
49590	Repair spigelian hernia	9.0	45	3.0
49600	Repair of omphalocele; small, with primary closure	9.5	45	6.0
49605	large or gastroschisis, with or without prosthesis	14.5	60	9.0
49606	with staged closure of prosthesis, reduction in operating room, under anesthesia	BR		9.0
49610	Repair of omphalocele (Gross type operation); first stage	12.0	60	8.0
49611	second stage	12.0	60	7.0
	(For diaphragmatic or hiatal hernia repair, see 39500-39531)			
49630	Reduction of torsion, omentum	BR		5.0
49635	Omentopexy for establishing collateral circulation in portal obstruction	BR		5.0
49640	Omentoplasty (omental flap reconstruction for transfer of omentum with intact blood supply to thorax, neck or axilla)	BR		5.0
SUTURE				
49900	Suture, secondary, of abdominal wall for evisceration or dehiscence	6.0	30	5.0
	(For suture of ruptured diaphragm, see 39540-39541)			
	(For debridement of abdominal wall, see 11042, 11043)			
49910	Suture of omentum, omentorrhaphy for wound or injury	BR		5.0
49999	Unlisted procedure, abdomen, peritoneum and omentum	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-235, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-235, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-235, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-235, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-235, filed 1/30/74; Order 68-7, § 296-22-235, filed 11/27/68, effective 1/1/69.]

URINARY SYSTEM

(For supply of anticarcinogenic agents, use 99070 in addition to primary procedure)

WAC 296-22-245 Kidney.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
	(For retroperitoneal exploration, abscess, tumor, or cyst, see 49010, 49060, 49200, 49201)			
50010	Renal exploration, not necessitating other specific procedures	17.0	90	6.0
50020	Drainage of perirenal or renal abscess (separate procedure)	14.0	90	5.0
50040	Nephrostomy, nephrotomy with drainage	20.0	90	5.0
50045	Nephrotomy, with exploration	20.0	90	5.0
	(For renal endoscopy performed in conjunction with this procedure, see 50570-50580)			
50060	Nephrolithotomy; removal of calculus	20.0	90	5.0
50065	secondary surgical operation for calculus	24.0	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
50070	complicated by congenital kidney abnormality	24.0	90	5.0
50075	removal of large (staghorn calculus filling renal pelvis and calyces including anatrophic pyelolithotomy)	26.0	90	5.0
50080	Percutaneous nephrostolithotomy or pyelostolithotomy, with or without endoscopy, lithotripsy, stenting or basket extraction; up to 2 cm	BR		5.0
50081	over 2 cm	BR		5.0
	(For establishment of nephrostomy without nephrostolithotomy, see 50040, 50395 or 52334)			
50100	Transection or repositioning of aberrant renal vessels (separate procedure)	17.0	90	5.0
50120	Pyelotomy; with exploration	20.0	90	5.0
	(For renal endoscopy performed in conjunction with this procedure, see 50570–50580)			
50125	with drainage, pyelostomy	20.0	90	5.0
50130	with removal of calculus (pyelolithotomy, pelviolithotomy including coagulum pyelolithotomy)	20.0	90	5.0
50135	complicated (e.g., secondary operation, congenital kidney abnormality)	24.0	90	5.0

EXCISION

	(For excision of retroperitoneal tumor or cyst, see 49200, 49201)			
*50200	Renal biopsy, percutaneous; by trocar or needle	2.4	7	
	(For CT guidance, see 76360, 76361)			
	(For fluoroscopic guidance, see 76000; for ultrasonic guidance, see 76942, 76943)			
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
50205	by surgical exposure of kidney	8.0	30	5.0
50220	Nephrectomy, including partial ureterectomy, any approach including rib resection;	20.0	90	5.0
50225	complicated because of previous surgery on same kidney	24.0	90	5.0
50230	radical, with regional lymphadenectomy	26.0	90	5.0
50234	Nephrectomy with total ureterectomy and bladder cuff; through same incision	24.0	90	5.0
50236	through separate incision	24.0	90	5.0
50240	Nephrectomy, partial	24.0	90	5.0
50280	Excision or unroofing of cyst(s) of kidney	18.0	90	5.0
50290	Excision of perinephric cyst	18.0	90	5.0

RENAL TRANSPLANTATION

	(For dialysis, see 90941–90999)			
50300	Donor nephrectomy, with preparation and maintenance of homograft; from cadaver donor, unilateral or bilateral	BR+		
50320	from living donor, unilateral	24.0	90	5.0
50340	Recipient nephrectomy (separate procedure); unilateral	20.0	90	5.0
50341	bilateral	30.0	90	5.0
50360	Renal homotransplantation, implantation of graft; excluding donor and recipient nephrectomy	30.0	180	6.0
50365	with unilateral recipient nephrectomy	50.0	180	6.0
50366	with bilateral recipient nephrectomy	50.0	180	6.0
50370	Removal of transplanted homograft (e.g., infarcted or rejected kidney)	13.0	60	6.0
50380	Renal autotransplantation, reimplantation of kidney	30.0	120	6.0
	(For extra-corporeal "bench" surgery, use autotransplantation as the primary procedure and add the secondary procedure e.g., partial nephrectomy, nephrolithotomy, and use the modifier -51)			

INTRODUCTION

	(For injection procedure for retroperitoneal pneumography, see 49430)			
*50390	Aspiration and/or injection of renal cyst or pelvis by needle, percutaneous	2.5	7	
	(For CT guidance, see 76365, 76366)			
	(For fluoroscopic guidance, see 76000; for ultrasonic guidance, see 76938, 76939)			
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
50392	Introduction of intracatheter or catheter into renal pelvis for drainage and/or injection, percutaneous	2.5	7	
	(For fluoroscopic guidance see 76000; for ultrasonic guidance see 76938)			
	(For radiographic procedure, see 74475, 74476)			
50393	Introduction of ureteral catheter or stent into ureter through renal pelvis for drainage and/or injection, percutaneous	2.5	7	3.0
	(For fluoroscopic guidance, see 76000; for ultrasonic guidance, see 76938)			
	(For radiographic procedure, see 74480, 74481)			
50394	Injection procedure for pyelography (as nephrostogram, pyelostogram, antegrade pyeloureterograms) through nephrostomy or pyelostomy tube, or			

		Unit Value	Follow-up Days=	Basic Anes@
	indwelling ureteral catheter (separate procedure)	.3	0	
50395	Introduction of guide into renal pelvis and/or ureter with dilation to establish nephrostomy tract, percutaneous	BR		3.0
	(For nephrostolithotomy, see 50080, 50081)			
	(For retrograde percutaneous nephrostomy, use 52334)			
	(For endoscopic surgery, see 50551–51561)			
50396	Manometric studies through nephrostomy or pyelostomy tube, or indwelling ureteral catheter	.4	0	
50398*	Change of nephrostomy or pyelostomy tube	.3	0	
REPAIR				
50400	Pyeloplasty; (Foley Y-pyeloplasty), plastic operation on renal pelvis, with or without plastic operation on ureter or nephropexy, nephrostomy, pyelostomy, or urertral [uretral] splinting	22.0	90	5.0
50405	complicated (congenital kidney abnormality, secondary pyeloplasty, solitary kidney calycoplasty)	26.0	90	5.0
	(50420 Nephropexy has been deleted)			
SUTURE				
50500	Nephrorrhaphy, suture of kidney wound or injury	20.0	90	8.0
50520	Closure of nephrocutaneous or pyelocutaneous fistula	20.0	90	5.0
50525	Closure of nephrovisceral fistula e.g., including visceral repair abdominal approach	24.0	90	5.0
50526	thoracic approach	24.0	90	11.0
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b, and modifier -62)			
50540	Symphysiotomy for horseshoe kidney with or without pyeloplasty and/or other plastic procedure, unilateral or bilateral (one operation)	28.0	90	5.0
ENDOSCOPY				
	(For supplies and materials, use 99070)			
	(References to office and hospital have been deleted)			
	(50550 has been deleted. To report use 50551)			
50551	Renal endoscopy through established nephrostomy or pyelostomy, with or without irrigation, instillation, or ureteropyelography, exclusive of radiologic service	2.0	3	3.0
	(50552 has been deleted. To report use 50553)			
50553	with ureteral catheterization	2.0	3	3.0
	(50554 has been deleted. To report use 50555)			
50555	with biopsy	2.0	3	3.0
	(50556 has been deleted. To report use 50557)			
50557	with fulguration, with or without biopsy	2.0	3	3.0
	(50558 has been deleted. To report use 50559)			
50559	with insertion of radioactive substance with or without biopsy and/or fulguration	3.0	3	3.0
	(50560 has been deleted. To report use 50561)			
50561	with removal of foreign body or calculus	2.0	3	3.0
	When procedures 50570–50580 provide a significant identifiable service, they may be added to 50045 and 50120			
50570	Renal endoscopy through nephrotomy or pyelotomy, with or without irrigation, instillation, or ureteropyelography, exclusive of radiologic service;	1.4	3	
	(For nephrotomy, see 50045)			
	(For pyelotomy, see 50120)			
50572	with ureteral catheterization	1.8	3	
50574	with biopsy	1.8	3	
50576	with fulguration, with or without biopsy	2.0	3	
50578	with insertion of radioactive substance, with or without biopsy and/or fulguration	2.4	3	
50580	with removal of foreign body or calculus	2.0	3	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-245, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-245, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-245, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-245, filed 1/30/74; Order 68-7, § 296-22-245, filed 11/27/68, effective 1/1/69.]

WAC 296-22-250 Ureter.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
50600	Ureterotomy with exploration or drainage (separate procedure)	18.0	90	5.0
	(For ureteral endoscopy performed in conjunction with this procedure, see 50970–50980)			
50605	Ureterotomy for insertion of indwelling stent, all types	BR		5.0
50610	Ureterolithotomy; upper one-third or ureter	20.0	90	5.0
50620	middle one-third of ureter	18.0	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
50630	lower one-third	20.0	90	5.0
	(For transvesical ureterolithotomy, see 51060)			
	(For cystotomy with stone basket extraction of ureteral calculus, see 51065)			
	(For endoscopic extraction or manipulation of ureteral calculus, see 50080, 50081, 50561, 52320–52330)			
EXCISION				
	(For ureterocele, see 51535, 51536, 52300)			
50650	Ureterectomy, with bladder cuff (separate procedure)	20.0	90	5.0
50660	Ureterectomy, total, ectopic ureter, combination abdominal, vaginal and/or perineal approach	22.0	90	7.0
INTRODUCTION				
50684	Injection procedure for ureterography or ureteropyelography through ureterostomy or indwelling ureteral catheter (separate procedure)	0.3	0	
50686	Manometric studies through ureterostomy or indwelling ureteral catheter	0.4	0	
50688*	Change of ureterostomy tube	0.3	0	
50690	Injection procedure for visualization of ilial conduit and/or ureteropyelography, exclusive of radiologic service (separate procedure)	0.4	0	
REPAIR				
	(When substantial ureteral tapering is required for the following procedures, use modifier –22)			
50700	Ureteroplasty: Plastic operation on ureter (e.g., stricture)	20.0	90	5.0
50715	Ureterolysis, with or without repositioning of ureter for retroperitoneal fibrosis; unilateral	16.0	90	5.0
50716	bilateral	24.0	90	5.0
50722	Ureterolysis for ovarian vein syndrome	16.0	90	5.0
50725	Ureterolysis for retrocaval ureter, with reanastomosis of upper urinary tract or vena cava	26.0	90	5.0
50740	Ureteropyelostomy anastomosis of ureter and renal pelvis	22.0	90	5.0
50750	Ureterocalycostomy, anastomosis of ureter to renal calyx	24.0	90	5.0
50760	Ureteroureterostomy	22.0	90	5.0
50770	Transureteroureterostomy anastomosis of ureter to contralateral ureter	24.0	90	5.0
50780	Ureteroneocystostomy anastomosis of ureter to bladder, or other operations for correction of vesicourelateral reflux; unilateral	22.0	90	5.0
50781	bilateral	26.0	90	5.0
	(When combined with cystourethroplasty or vasical neck revision, see 51820)			
50785	Ureteroneocystostomy, with bladder flap; unilateral	24.0	90	5.0
50786	bilateral	28.0	90	5.0
50800	Ureteroenterostomy, direct anastomosis of ureter to intestine; unilateral	22.0	90	5.0
50801	bilateral	26.0	90	5.0
50810	Ureterosigmoidostomy, with creation of sigmoid bladder and establishment of abdominal or perineal colostomy, including bowel anastomosis	30.0	120	6.0
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b, and modifier –62)			
50820	Ureteroileal conduit (ileal bladder), including bowel anastomosis (Bricker operation); unilateral	30.0	120	6.0
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b, and modifier –62)			
50821	bilateral	34.0	120	6.0
	(For combination of 50800–50821 with cystectomy, see 51580–51595)			
50830	Urinary undiversion (e.g., taking down of ureteroilial conduit, ureterosigmoidostomy or ureterentorostomy with ureteroureterostomy or ureteroneocystostomy)	BR		6.0
50840	Replacement of all or part of ureter by bowel segment, including bowel anastomosis; unilateral	30.0	120	6.0
	(For supplemental skills of two surgeons, see WAC 296–22–010, item 5b, and modifier –62)			
50841	bilateral	40.0	120	6.0
50860	Ureterostomy, transplantation of ureter to skin; unilateral	18.0	90	5.0
50861	bilateral	22.0	90	5.0
SUTURE				
50900	Ureterorrhaphy, suture of ureter (separate procedure)	20.0	90	5.0
50920	Closure of ureterocutaneous fistula	20.0	90	5.0
50930	Closure of ureterovisceral fistula (including visceral repair)			5.0
50940	Deligation of ureter	BR		5.0
	(For ureteroplasty, ureterolysis, etc., see 50700–50861)			
ENDOSCOPY				
	(50950 has been deleted. To report use 50951)			
50951		2.5	3	
	(50952 has been deleted. To report use 50953)			
50953	with ureteral catheterization	2.5	3	
	(50954 has been deleted. To report use 50955)			
50955	with biopsy	2.5	3	

		Unit Value	Follow-up Days=	Basic Anes@
	(50956 has been deleted. To report use 50957)			
50957	with fulguration, with or without biopsy	2.5	3	
	(50958 has been deleted. To report use 50959)			
50959	with insertion of radioactive substance with or without biopsy and/or fulguration (not including provision of material)	2.5	3	
	(50960 has been deleted. To report use 50961)			
50961	with removal of foreign body or calculus	2.5	3	
	When procedures 50970–50980 provide a significant identifiable service, they may be added to 50600			
50970	Ureteral endoscopy through ureterotomy, with or without irrigation, instillation, or ureteropyelography, exclusive of radiologic service;	1.3	3	
	(For ureterotomy, see 50600)			
50972	with ureteral catheterization	1.8	3	
50974	with biopsy	1.8	3	
50976	with fulguration, with or without biopsy	2.0	3	
50978	with insertion of radioactive substance, with or without biopsy and/or fulguration (not including provision of material)	2.4	3	
50980	with removal of foreign body or calculus	2.0	3	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-250, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-250, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-250, filed 1/30/74; Order 68-7, § 296-22-250, filed 11/27/68, effective 1/1/69.]

WAC 296-22-255 Bladder.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
51000	Aspiration of bladder by needle	0.4	0	
*51005	Aspiration of bladder; by trocar or intracatheter	*1.0	0	
51010	with insertion of suprapubic catheter	2.0	30	5.0
51020	Cystotomy or cystostomy; with fulguration and/or insertion of radioactive material	14.5	90	5.0
51030	with cryosurgical destruction of intravesical lesion	14.5	90	5.0
51040	Cystostomy, cystotomy with drainage	12.0	90	5.0
51045	Cystotomy, with insertion of ureteral catheter or stent (separate procedure)	14.5	90	5.0
51050	Cystolithotomy, cystotomy with removal of calculus, without vesical neck resection	14.5	90	5.0
51060	Transvesical ureterolithotomy	19.0	90	5.0
51065	Cystotomy, with stone basket extraction and/or ultrasonic or electro-hydraulic fragmentation of ureteral calculus	12.0	30	5.0
51080	Drainage of perivesical or prevesical space abscess	8.0	90	5.0
EXCISION				
51500	Excision of urachal cyst or sinus, with or without umbilical hernia repair	14.0	90	5.0
51520	Cystotomy; for simple excision of vesical neck (separate procedure)	16.0	90	5.0
51525	for excision of bladder diverticulum, single or multiple (separate procedure)	20.0	90	5.0
51530	for excision of bladder tumor	16.0	90	5.0
	(For transurethral excision, see 52200–52240)			
51535	Cystotomy for excision, incision or repair of ureterocele; unilateral	16.0	90	5.0
51536	bilateral	18.0	90	5.0
	(For transurethral excision, see 52300)			
51550	Cystectomy, partial; simple	18.0	90	6.0
51555	complicated (e.g., postradiation, previous surgery, difficult location)	20.0	90	6.0
51565	Cystectomy, partial, with reimplantation of ureter(s) into bladder (ureter-oneocystostomy)	24.0	90	6.0
51570	Cystectomy, complete; (separate procedure)	26.0	90	6.0
51575	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	34.0	90	6.0
51580	Cystectomy, complete with ureterosigmotomy or ureterocutaneous transplantations;	34.0	120	7.0
51585	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	40.0	120	7.0
51590	Cystectomy, complete, with ureteroileal conduit or sigmoid bladder, including bowel anastomosis;	44.0	120	7.0
51595	with bilateral lymphadenectomy, including external iliac, hypogastric and obturator nodes	50.0	120	7.0
51597	Pelvic exenteration, complete, for malignancy, with removal of bladder and ureteral transplantations, with or without hysterectomy and/or abdominoperineal resection of rectum and colon and colostomy, or any combination thereof	BR		7.0
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b, and modifier -62)			

		Unit Value	Follow-up Days=	Basic Anes@
	INTRODUCTION			
	(For bladder catheterization, see 53670–53675)			
51600	Injection procedure for cystography or voiding urethracystography	0.2	0	
51605	Injection procedure and placement of chain for contrast and/or chain urethrocystography	0.4	0	
51610	Injection procedure for retrograde urethrocystography	0.3	0	
	(For injection procedure for retroperitoneal pneumography, see 49430)			
*51700	Bladder irrigation, simple, lavage and/or instillation	*0.2	0	
51705*	Change of cystostomy tube; simple	0.3	0	
51710*	complicated	BR		
51720	Bladder instillation of anticarcinogenic agent (including detention time)	0.8	0	
	URODYNAMICS			
	The following section (51725–51796) lists procedures that may be used separately or in many and varied combinations. All of the presently known urodynamic procedures are listed as are some of their most frequently used combinations. When multiple procedures are performed in the same investigative session, modifier '–51' should be employed.			
	All procedures in this section imply that these services are performed by, or are under the direct supervision of, a physician and that all instruments, equipment, fluids, gases, probes, catheters, technician's fees, medications, gloves, trays, tubing and other sterile supplies be provided by the physician. When the physician only interprets the results and/or operates the equipment, a p.c. (professional component modifier '–26') should be used to identify physicians' services.			
	Only the urodynamic testing is included in this section. The nerve blocks that are listed may be pudendal, unilateral or bilateral; sacral, unilateral or bilateral, single or multiple; or subarachnoid and epidural of the sacral segments. They are listed in the neurosurgical section 62274–62279 and 64430–64441.			
	CYSTOMETROGRAM STUDIES (CMG)			
	As a single procedure (separate procedure) performed in any body position, including residual urine volume, volume at first urge to void, bladder capacity, tracing (if available), interpretation and report. (For simultaneous electromyogram see 51786 and 51788)			
51725	Simple cystometrogram (CMG) (e.g., spinal manometer)	BR		
51726	Complex cystometrogram (e.g., calibrated electronic equipment)			
	(51727–51733 have been deleted. To report, use 51726)			
	UROFLOWMETRIC STUDIES (UFR)			
	As a single procedure (separate procedure) performed in any body position, including volume, flow rate, and tracing (if available), interpretation and report. (For simultaneous electromyogram see 51787, 51788.) (For simultaneous voiding pressure see 51795–51796)			
	EXTERNAL MEASUREMENTS			
51736	Simple uroflowmetry (UFR) (e.g., stop-watch flow rate, mechanical uroflowmeter);	BR		
	(51737–51738 have been deleted. To report, use 51736)			
51739	Sound recording of external stream (e.g., Lyons type, Keitzer type)	BR		
51741	Complex uroflowmetry (e.g., calibrated electronic equipment)	.8		
	(51742–51749 have been deleted. To report, use 51741)			
	INTERNAL STREAM MEASUREMENTS			
	(51751–51769 have been deleted. To report, use 53899)			
	URETHRAL PRESSURE PROFILE STUDIES – URETHRAL CLOSURE PRESSURE PROFILE (UPP)			
	As a single procedure (separate procedure) performed in any body position, including up to three recordings of urethral length and pressure, tracing (if available), interpretation and report. Any initial volume.			
51772	Urethral pressure profile, studies (UPP) (urethral closure pressure profile), any technique gas or liquid; initial recording	BR		
	(51773–51783 have been deleted. To report, use 51772)			
	ELECTROMYOGRAPHIC STUDIES (EMG)			
	Anal or urethral sphincter, detrusor, urethra, perineum or abdominal musculature. (Usually not a separate procedure.)			
51785	Electromyographic studies (EMG) of anal or urethral sphincter, any technique	BR		
	(51786–51791 have been deleted. To report, use 51785)			
51792	Stimulus evoked response (e.g., measurement of bulbocavernosus reflex latency time)	BR		
	VOIDING PRESSURE STUDIES – BLADDER VOIDING PRESSURE (VP)			
	As a single procedure (separate procedure) performed in any body position, including residual fluid volume, bladder volume at time of voiding, tracing (if available), interpretation and report.			
51795	Voiding pressure studies (VP); bladder voiding pressure, any technique	BR		
	(51796 has been deleted. To report, use 51795)			
51797	intra-abdominal voiding pressure (AP) (rectal, gastric, intraperitoneal)			
	REPAIR			
51800	Cystoplasty or cystourethroplasty, plastic operation on bladder and/or vesical neck (anterior Y-plasty, vesical fundus resection), any procedure, with or without wedge resection of posterior vesical neck	20.0	90	5.0

		Unit Value	Follow-up Days=	Basic Anes@
51820	Cystourethroplasty with unilateral or bilateral ureteroneocystostomy	30.0	90	5.0
51840	Anterior vesicourethropexy, or urethropexy (Marshall-Marchetti-Krantz type); simple	14.5	90	4.0
51841	complicated (e.g., secondary repair)	21.0	90	4.0
	(For urethropexy (Peyreya type), see 57289)			
51845	Abdomino-vaginal vesical neck suspension, with or without endoscopic control (e.g., Stamey, Raz, modified Pereyra)	BR		4.0
51860	Cystorrhaphy, suture of bladder wound, injury or rupture; simple	14.5	90	4.0
51865	complicated	BR+		6.0
51880	Closure of cystostomy (separate procedure)	8.0	90	3.0
51900	Closure of vesicovaginal fistula, abdominal approach	22.0	90	5.0
	(For vaginal approach, see 57320-57330)			
51920	Closure of vesicouterine fistula;	20.0	90	5.0
51925	with hysterectomy	20.0	90	5.0
	(For closure of vesicoenteric fistula, see 44660, 44661)			
	(For closure of rectovesical fistula, see 45800-45805)			
51940	Closure of exstrophy (see also 54390)	BR		5.0
51960	Enterocystoplasty, including bowel anastomosis	30.0	90	5.0
	(For supplemental skills of two surgeons, see WAC 296-22-010, item 5b, and modifier -62)			
51980	Cutaneous vesicostomy	18.0	90	5.0

ENDOSCOPY - CYSTOSCOPY, URETHROSCOPY, CYSTOURETHROSCOPY

NOTES

Endoscopic descriptions are listed so that the main procedure can be identified without having to list all the minor related functions performed at the same time. For example: Meatotomy, urethral calibration and/or dilation, urethroscopy, and cystoscopy prior to a transurethral resection of prostate; ureteral catheterization following extraction of ureteral calculus; internal urethrotomy and bladder neck fulguration when performing a cystourethroscopy for the female urethral syndrome. When the secondary procedure requires significant additional time and effort, it may be identified by the addition of modifier '-22.' For example: Urethrotomy performed for a documented preexisting stricture or bladder neck contracture.

		Unit Value	Follow-up Days=	Basic Anes@
52000	Cystourethroscopy (separate procedure)	1.2	7	3.0
52005	with ureteral catheterization, with or without irrigation, instillation, or ureterpyelography, exclusive of radiologic service	1.6	7	3.0
52007	with ureteral catheterization and brush biopsy of ureter and/or renal pelvis	BR	3	3.0
52010	with ejaculatory duct catheterization	1.6	7	
	(52100 has been deleted. To report use 52000)			
	(52105 has been deleted. To report use 52005)			
	(52107 has been deleted. To report use 52007)			
	(52110 has been deleted. To report use 52010)			
	(52190 has been deleted. To report use 53899)			

TRANSURETHRAL SURGERY (URETHRA AND BLADDER)

	(References to office and hospital have been deleted)			
	(52202 has been deleted. To report use 52204)			
52204	Cystourethroscopy, with biopsy	2.0	7	3.0
	(52212 has been deleted. To report use 52214)			
52214	Cystourethroscopy, with fulguration (including cryosurgery) of trigone, bladder neck, prostatic fossa, urethra, or periurethral glands	2.0	7	3.0
	(52222 has been deleted. To report use 52224)			
52224	Cystourethroscopy, with fulguration (including cryosurgery) or treatment of MINOR (less than 0.5 cm) lesion(s), with or without biopsy	2.0	7	3.0
	(52232 has been deleted. To report use 52234)			
52234	Cystourethroscopy, with fulguration (including cryosurgery) and/or resection of; SMALL bladder tumor(s) (0.5 to 2.0 cm)	5.0	30	3.0
52235	MEDIUM bladder tumor(s) (2.0-5.0 cm)	12.0	30	3.0
52240	LARGE bladder tumor(s)	18.0	30	5.0
52250	Cystourethroscopy with insertion of radioactive substance, with or without biopsy or fulguration	6.0	30	3.0
52260	Cystourethroscopy, with dilation of bladder for interstitial cystitis; general or conduction (spinal) anesthesia	3.0	30	3.0
52265	local anesthesia	1.4	7	
52270	Cystourethroscopy, with internal urethrotomy; female	4.0	45	3.0
52275	male	4.0	45	3.0
52276	Cystourethroscopy, with direct vision internal urethrotomy	4.0	45	3.0
52277	Cystourethroscopy, with resection of external sphincter (sphincterotomy)	6.0	30	3.0
	(52280 has been deleted. To report use 52281)			
52281	Cystourethroscopy, with calibration and/or dilation of urethral stricture or stenosis, with or without meatotomy and injection procedure for cystograpy, male or female	2.4	7	3.0
	(52282 has been deleted. To report use 52283)			

		Unit Value	Follow-up Days=	Basic Anes@
52283	Cystourethroscopy, with steroid injection into stricture .	2.0	7	3.0
52285	Cystourethroscopy for treatment of the female urethral syndrome with any or all of the following: urethral meatotomy, urethral dilation, internal urethrotomy, lysis of urethrovaginal septal fibrosis, lateral incisions of the bladder neck, and fulguration of urethral polyp(s), bladder neck, and/or trigone	3.4	7	3.0
52290	Cystourethroscopy; with ureteral meatotomy, unilateral or bilateral	4.0	30	3.0
52300	with resection or fulguration of ureterocele, unilateral or bilateral	6.0	30	3.0
52305	with incision or resection of orifice of bladder diverticulum, single or multiple	6.0	30	3.0
52310	Cystourethroscopy, with removal of foreign body or calculus from urethra or bladder; simple	4.0	30	3.0
52315	complicated	BR+		3.0
52317	Litholapaxy: crushing or fragmentation of calculus by any means in bladder and removal of fragments, simple; small (less than 2.5 cm)	BR	30	3.0
52318	complicated or large (over 2.5 cm)	BR	30	3.0

TRANSURETHRAL SURGERY (URETER AND PELVIS)

52320	Cystourethroscopy (including ureteral catheterization); with removal of ureteral calculus	7.0	30	3.0
52325	with fragmentation of ureteral calculus (e.g. ultrasonic or electro-hydraulic technique)	BR	30	3.0
52330	with manipulation, without removal of ureteral calculus	5.0	30	3.0
52332	cystourethroscopy, with insertion of indwelling ureteral stent (e.g., Gibbons or double J type)	BR	7	3.0
52334	Cystourethroscopy with insertion of ureteral guide wire through kidney to establish a percutaneous nephrostomy, retrograde	BR		3.0
	(For percutaneous nephrostolithotomy, see 50080, 50081; for establishment of nephrostomy tract only, see 50395)			
52335	Cystourethroscopy, with ureteroscopy and/or pyeloscopy;	4.2	7	3.0
52336	with removal or manipulation of calculus (ureteral catheterization is included)	BR		3.0
52337	with lithotripsy (ureteral catheterization is included)	BR		3.0
52338	with biopsy and/or fulguration of lesion	BR		3.0

TRANSURETHRAL SURGERY (VESICAL NECK AND PROSTATE)

52340	Cystourethroscopy, with incision, fulguration or resection of bladder neck and/or posterior urethra (congenital valves, obstructive hypertrophic mucosal folds)	6.0	30	3.0
52500	Transurethral resection of bladder neck, (separate procedure)	10.0	90	4.0
52601	Transurethral resection of prostate, including control of postoperative bleeding during the hospitalization, complete (vasectomy, meatotomy, cystourethroscopy, urethral calibration and/or dilation, and internal urethrotomy are included)	20.0	90	5.0
	(52605 has been deleted. To report use 52606)			
	(For other approaches, see 55801-55845)			
52606	Transurethral fulguration for postoperative bleeding occurring after the usual follow-up time	2.4	0	
	(For other approaches, see 55801-55845)			
52612	Transurethral resection of prostate; first stage of two-stage resection (partial resection)	15.0	90	5.0
52614	second stage of two-stage resection (resection completed)	11.0	90	5.0
52620	Transurethral resection; of residual obstructive tissue after 90 days postoperative	6.0	90	5.0
52630	of regrowth of obstructive tissue longer than one year postoperative	20.0	90	5.0
52640	of postoperative bladder neck contracture	10.0	90	5.0
52650	Transurethral cryosurgical removal of prostrate (postoperative irrigations and aspirations of sloughing tissue included)	20.0	120	5.0
52700	Transurethral drainage of prostatic abscess	8.0	60	5.0
	(52800, 52805 Lithoplaxy [litholapaxy] have been deleted. To report, use 52317, 52318)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-255, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-255, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-255, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-255, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-255, filed 1/30/74; Order 68-7, § 296-22-255, filed 11/27/68, effective 1/1/69.]

WAC 296-22-260 Urethra.

		Unit Value	Follow-up Days=	Basic Anes@
	(For endoscopy, see cystoscopy, urethroscopy, cystourethroscopy, 52000-52805)			
	(For injection procedure for urethrocystography, see 51600-51610)			

INCISION

53000	Urethrotomy or urethrostomy, external (separate procedure);			

		Unit Value	Follow-up Days=	Basic Anes@
	pendulous urethra	2.4	15	3.0
53010	perineal urethra, external	6.0	30	3.0
53020	Meatotomy, cutting of meatus (separate procedure), except infant	1.0	15	3.0
	(53021 has been deleted. To report use 53020)			
53025	Infant	0.6	15	3.0
53040	Drainage of deep periurethral abscess	3.0	30	3.0
	(For subcutaneous abscess, see 10060-10061)			
53060	Drainage of Skene's gland abscess or cyst	1.2	15	3.0
53080	Drainage of perineal urinary extravasation; uncomplicated (separate procedure)	4.0	15	3.0
53085	complicated	BR+		5.0

EXCISION

53200	Biopsy of urethra	2.0	7	3.0
53210	Urethrectomy, total, including cystostomy; female	14.0	60	5.0
53215	male	18.0	60	5.0
53220	Excision or fulguration of carcinoma of urethra	BR+		3.0
53230	Excision of urethral diverticulum (separate procedure); female	10.0	60	3.0
53235	male	12.0	60	3.0
53240	Marsupialization of urethral diverticulum, male or female	4.0	30	3.0
53250	Excision of bulbourethral gland (Cowper's gland)	12.0	60	3.0
53260	Excision or fulguration; urethral polyp(s), distal urethra	1.0	15	3.0
	(For endoscopic approach, see 52212-52224)			
53265	urethral caruncle	1.2	15	3.0
53270	Skene's glands	1.2	15	3.0
53275	urethral prolapse	3.0	30	3.0

REPAIR

	(For hypospadias, see 54300-54352)			
53400	Urethroplasty; first stage, for fistula, diverticulum, or stricture, (e.g., Johannsen type)	10.0	60	3.0
53405	second stage (formation of urethra), including urinary diversion	14.0	60	3.0
53410	Urethroplasty, one-stage reconstruction of male anterior urethra	16.0	60	3.0
53415	Urethroplasty, transpubic, one stage, for reconstruction or repair of prostatic or membranous urethra	BR		3.0
53420	Urethroplasty, two-stage reconstruction or repair of prostatic or membranous urethra; first stage	20.0	60	3.0
53425	second stage	20.0	90	3.0
53430	Urethroplasty, reconstruction of female urethra	14.0	90	3.0
53440	Operation for correction of male urinary incontinence, with or without introduction of prosthesis	20.0	90	3.0
53442	Removal of perineal prosthesis introduced for continence	BR	90	3.0
53443	Urethroplasty with tubularization of posterior urethra and/or lower bladder for incontinence (e.g., Tenago, Leadbetter procedure)	BR		3.0
53445	Operation for correction of male urinary incontinence with placement of inflatable urethral or bladder neck sphincter, including placement of pump and/or reservoir	BR	90	3.0
53447	Removal, repair or replacement of inflatable sphincter including pump and/or reservoir and/or cuff	BR	90	3.0
53449	Surgical correction of hydraulic abnormality of inflatable sphincter device	BR	90	3.0
53450	Urethromeatoplasty, with mucosal advancement	4.0	30	3.0
53460	Urethromeatoplasty, with partial excision of distal urethral segment (Richardson type procedure)	3.4	30	3.0
	(For meatotomy, see 53020, 53025)			

SUTURE

53502	Urethrorrhaphy, suture of urethral wound or injury, female	BR		3.0
53505	Urethrorrhaphy, suture of urethral wound or injury; penile	10.0	90	3.0
53510	perineal	14.0	90	3.0
53515	prostatomembranous	20.0	90	3.0
53520	Closure of urethrostomy or urethrocutaneous fistula, male (separate procedure)	6.0	90	3.0
	(For closure of urethrovaginal fistula, see 57310)			
	(For closure of urethrorectal fistula, see 45820, 45825)			

MANIPULATION

*53600	Dilation of urethral stricture by passage of sound, male; initial	*0.4	0	
*53601	subsequent	*0.3	0	
53605	Dilation of urethral stricture or vesical neck by passage of sound or urethral dilator, male, general or conduction (spinal) anesthesia,	1.6	3	3.0
*53620	Dilation of urethral stricture by passage of filiform and follower, male; initial	*0.8	0	
*53621	subsequent	*0.6	0	
*53640	Passage of filiform and follower for acute vesical retention, male	*0.8	0	
*53660	Dilation of female urethra including suppository and/or instillation; initial	*0.4	0	
*53661	subsequent	*0.3	0	
53665	dilation of female urethra, general or conduction (spinal) anesthesia	1.5	3	3.0
53670*	Catheterization; simple	0.3	0	
53675*	complicated (may include difficult removal of balloon catheter)	0.7	0	
53899	Unlisted procedure, urinary system	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-260, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-260, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-260, filed 1/30/74; Order 68-7, § 296-22-260, filed 11/27/68, effective 1/1/69.]

MALE GENITAL SYSTEM

WAC 296-22-265 Penis.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
54000	Slitting of prepuce, dorsal or lateral, (separate procedure); newborn	0.6	7	
54001	except newborn	1.4	7	3.0
54015	Incision and drainage of penis, deep	1.4	15	3.0
DESTRUCTION				
*54050	Destruction of condylomata, penis, multiple, simple, chemical	*0.3	0	3.0
*54055	electrodesiccation	*0.8	0	3.0
*54060	surgical excision	*1.0	0	3.0
54065	extensive	BR		3.0
	(For destruction or excision of other lesions, see integumentary system)			
EXCISION				
54100	Biopsy of penis, cutaneous (separate procedure)	0.6	7	3.0
54105	deep structures	1.4	15	3.0
54110	Excision of penile plaque (Peyronie disease);	7.4	30	3.0
54111	with graft to 5 cm in length	BR		3.0
54112	with graft greater than 5 cm in length	BR		3.0
54115	Removal foreign body from deep penile tissue (e.g., plastic implant)	6.0	45	3.0
54120	Amputation of penis, partial	10.0	60	3.0
54125	complete	20.0	60	3.0
54130	Amputation of penis, radical; with bilateral inguinofemoral lymphadenectomy	26.0	90	3.0
54135	in continuity with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	30.0	90	5.0
	(For lymphadenectomy (separate procedure), see 38760-38771)			
54150	Circumcision, clamp procedure; newborn	0.8	15	
54152	except newborn	1.0	15	3.0
	(54154 has been deleted. To report, use 54152)			
54160	Circumcision, surgical excision other than clamp or dorsal slit; newborn	0.8	30	
54161	except newborn	3.0	30	3.0
INTRODUCTION				
*54200	Injection procedure for Peyronie disease	*0.4	0	
54205	with surgical exposure of plaque	7.4	30	3.0
54220	Irrigation of corpora cavernosa for priapism	BR		3.0
54230	injection procedure for corpora cavernosography	BR		3.0
54240	penile plethysmography	BR		3.0
54250	Nocturnal penile tumescence test	BR		3.0
REPAIR				
	(For other urethroplasties, see 53400-53430)			
54300	Plastic operation of penis for straightening of chordee (e.g., hypospadias), with or without mobilization of urethra;	8.0	60	3.0
	(54305 has been deleted. To report, see 54304 et seq.)			
54304	Plastic operation on penis for correction of chordee or for first stage hypospadias repair with or without transplantation of prepuce and/or skin flaps	BR		3.0
54308	Urethroplasty for second stage hypospadias repair (including urinary diversion); less than 3 cm	BR		3.0
54312	greater than 3 cm	BR		3.0
54316	Urethroplasty for second stage hypospadias repair (including urinary diversion) with free skin graft obtained from site other than genitalia	BR		3.0
54318	Urethroplasty for third stage hypospadias repair to release penis from scrotum (e.g., third stage Cecil repair)	BR		3.0
	(54320, 54325, 54330 have been deleted. To report, see 54308 et seq.)			
54322	One stage distal hypospadias repair (with or without chordee or circumcision); with simple meatal advancement (e.g., Magpi, V-flap)	BR		3.0
54324	with urethroplasty by local skin flaps (e.g., flip-flap, prepucial flap)	BR		3.0
54326	with urethroplasty by local skin flaps and mobilization of urethra	BR		3.0
54328	with extensive dissection to correct chordee and urethroplasty with local skin flaps, skin graft patch, and/or island flap	BR		3.0
54332	One stage proximal penile or penoscrotal hypospadias repair requiring extensive dissection to correct chordee and urethroplasty by use of skin graft tube and/or island flap	BR		3.0
54336	One stage perineal hypospadias repair requiring extensive dissection to correct chordee and urethroplasty by use of skin graft tube and/or island flap	BR		3.0
54340	Repair of hypospadias complications (i.e., fistula, stricture, diverticula); by closure, incision,			

		Unit Value	Follow-up Days=	Basic Anes@
	or excision, simple	BR		3.0
54344	requiring mobilization of skin flaps and urethroplasty with flap or patch graft	BR		3.0
54348	requiring extensive dissection and urethroplasty with flap, patch or tubed graft (includes urinary diversion)	BR		3.0
54352	Repair of hypospadias cripple requiring extensive dissection and excision of previously constructed structures including re-release of chordee and reconstruction of urethra and penis by use of local skin as grafts and island flaps and skin brought in as flaps or grafts	BR		3.0
54360	Plastic operation on penis to correct angulation	BR	90	3.0
54380	Plastic operation on penis for epispadias distal to external sphincter	BR+		3.0
54385	with incontinence	BR		4.0
54390	with exstrophy of bladder	BR		4.0
54400	Insertion of penile prosthesis, noninflatable	14.0		3.0
54402	Removal or replacement of noninflatable penile prosthesis	BR		
54405	Insertion of inflatable penile prosthesis, including placement of pump, cylinders and/or reservoir	BR		3.0
54407	Removal repair or replacement of inflatable penile prosthesis, including pump and/or reservoir and/or cylinders	BR		3.0
55409	Surgical correction of hydraulic abnormality of inflatable prosthesis	BR		3.0
54420	Corpora cavernosa-saphenous vein shunt (priapism operation), unilateral or bilateral	10.0		3.0
54430	Corpora cavernosa-corpus spongiosum shunt or corpora cavernosa-glans penis shunt (priapism operation), unilateral or bilateral	10.0	0	3.0
54435	Corpora cavernosa-glans penis fistulization (e.g., biopsy needle, Winter procedure, rongeur, or punch) for priapism	BR		3.0
54440	Plastic operation of penis for injury	BR		3.0
	MANIPULATION			
54450	Foreskin manipulation including lysis of preputial adhesions and stretching	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-265, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-265, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-265, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-265, filed 1/30/74; Order 68-7, § 296-22-265, filed 11/27/68, effective 1/1/69.]

WAC 296-22-270 Testis.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
54500	Biopsy of testis, needle (separate procedure)	0.4	7	
54505	Biopsy of testis, incisional, (separate procedure); unilateral	3.0	15	3.0
54506	bilateral	4.0	15	3.0
	(When combined with vasogram, seminal vesiculogram or epididymogram, see 55300)			
54510	Excision of local lesion of testis	6.0	30	3.0
54520	Orchiectomy, simple, (including subcapsular), with or without testicular prosthesis, scrotal or inguinal approach; unilateral	6.0	30	3.0
54521	bilateral	8.0	30	3.0
54530	Orchiectomy, radical, for tumor; inguinal approach	8.0	30	3.0
54535	with abdominal exploration	12.0	30	4.0
	(For orchiectomy with repair of hernia, see 49510)			
	(For radical retroperitoneal lymphadenectomy, see 38780)			
54550	Exploration for undescended testis (inguinal or scrotal area); unilateral	8.0	30	4.0
54555	bilateral	12.0	30	4.0
54560	Exploration for undescended testis with abdominal exploration; unilateral	12.0	30	4.0
54565	bilateral	15.0	30	5.0
	REPAIR			
54600	Reduction of torsion of testis, surgical, with or without fixation of contralateral testis	8.0	30	3.0
54620	Fixation of contralateral testis (separate procedure)	4.0	30	3.0
54640	Orchiopexy, any type, with or without hernia repair; unilateral	12.0	30	3.0
54641	bilateral	18.0	30	4.0
54645	second stage (Torek type)	2.0	30	3.0
54660	Insertion of testicular prosthesis (separate procedure); unilateral	4.0	30	3.0
54661	bilateral	6.0	30	3.0
54670	Suture or repair of testicular injury	8.0	30	3.0
54680	Transplantation of testis(es) to thigh (because of scrotal destruction)	10.0	30	3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-22-270, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-270, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-270, filed 1/30/74; Order 68-7, § 296-22-270, filed 11/27/68, effective 1/1/69.]

WAC 296-22-275 Epididymis.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
54700	Incision and drainage of epididymis, testis and/or scrotal space (abscess or hematoma)	1.4	7	3.0

		Unit Value	Follow-up Days=	Basic Anes@
EXCISION				
54800	Biopsy of epididymis, needle	0.4	7	
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)			
54820	Exploration of epididymis with or without biopsy	6.0	30	3.0
54830	Excision of local lesion of epididymis	6.0	30	3.0
54840	Excision of spermatocele with or without epididymectomy	8.0	45	3.0
	(With hernia repair, see 49515)			
54860	Epididymectomy, unilateral	8.0	45	3.0
54861	bilateral	10.0	45	3.0
REPAIR				
54900	Epididymovasostomy, anastomosis of epididymis to vas deferens; unilateral	10.0	90	3.0
54901	bilateral	14.0	90	3.0
	(For microsurgical repair with use of operating microscope, add modifier –20)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-275, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-275, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-275, filed 1/30/74; Order 68-7, § 296-22-275, filed 11/27/68, effective 1/1/69.]

WAC 296-22-280 Tunica vaginalis.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*55000	Puncture aspiration of hydrocele, with or without injection of medication	*0.48	0	
EXCISION				
55040	Excision of hydrocele; unilateral.	8.0	45	3.0
55041	bilateral	12.0	45	3.0
	(With hernia repair, see 49515)			
REPAIR				
55060	Repair of hydrocele (Bottle type)	6.0	45	3.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-280, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-280, filed 1/30/74; Order 68-7, § 296-22-280, filed 11/27/68, effective 1/1/69.]

WAC 296-22-285 Scrotum.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*55100	Drainage of scrotal wall abscess (see also 54700)	*0.4	0	3.0
55110	Scrotal exploration	BR		3.0
55120	Removal of foreign body in scrotum	BR		3.0
EXCISION				
	(For excision of local lesion of skin of scrotum, see integumentary system)			
55150	Resection of scrotum	BR		3.0
REPAIR				
	(55170 has been deleted (scrotoplasty); to report see 55175–55180)			
55175	Scrotoplasty; simple	BR		3.0
55180	complicated	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-285, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-285, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-285, filed 1/30/74; Order 68-7, § 296-22-285, filed 11/27/68, effective 1/1/69.]

WAC 296-22-290 Vas deferens.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
55200	Vasotomy, cannulization with or without incision of vas, unilateral or bilateral (separate procedure)	3.6	30	3.0
EXCISION				
55250	Vasectomy, unilateral or bilateral (separate procedure), including postoperative semen examination(s)	3.6	30	3.0
INTRODUCTION				
55300	Vasotomy for vasograms, seminal vesiculograms, or epididymograms, unilateral or bilateral ...	3.6	30	3.0
	(When combined with 54505 or 54506, apply WAC 296-22-010, item 7a)			
	(For radiographic procedure, see 74440, 74441)			
REPAIR				
55400	Vasovasostomy, vasovasorrhaphy; unilateral	10.0	90	3.0
55401	bilateral	14.0	90	3.0
	(For microsurgical repair with use of operating microscope, add modifier –20)			
SUTURE				
55450	Ligation (percutaneous) of vas deferens, unilateral or bilateral (separate procedure)	1.2	30	3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-290, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-290, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-290, filed 1/30/74; Order 68-7, § 296-22-290, filed 11/27/68, effective 1/1/69.]

WAC 296-22-295 Spermatic cord.

		Unit Value	Follow-up Days=	Basic Anes@
EXCISION				
55500	Excision of hydrocele of spermatic cord, unilateral (separate procedure)	6.0	45	3.0
55520	Excision of lesion of spermatic cord (separate procedure)	6.0	30	3.0
55530	Excision of varicocele or ligation of spermatic veins for varicocele; (separate procedure)	8.0	45	3.0
55535	abdominal approach	9.5	45	5.0
55540	with hernia repair	9.5	45	3.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-295, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-295, filed 1/30/74; Order 68-7, § 296-22-295, filed 11/27/68, effective 1/1/69.]

WAC 296-22-300 Seminal vesicles.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
55600	Vesiculotomy, unilateral	8.0	60	5.0
55601	bilateral	12.0	60	5.0
55605	complicated	14.0	60	3.0
EXCISION				
55650	Vesiculectomy, any approach; unilateral	20.0	90	5.0
55651	bilateral	20.0	90	5.0
55680	Excision of Mullerian duct cyst	20.0	90	5.0
	(For injection procedures, see 52010, 52110, 55300)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-300, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-300, filed 1/30/74; Order 68-7, § 296-22-300, filed 11/27/68, effective 1/1/69.]

WAC 296-22-305 Prostate.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
55700	Biopsy, prostate; needle or punch, single or multiple, any approach	1.4	15	3.0
55705	incisional, any approach	8.0	30	4.0
55720	Prostatotomy, external drainage of prostatic abscess, any approach; simple	8.0	60	4.0
55725	complicated	14.0	60	4.0
	(For transurethral drainage, see 52700)			
55740	Prostatolithotomy, removal of prostatic calculus (separate procedure)	20.0	60	4.0
EXCISION				
	(For transurethral removal of prostate, see 52601-52650)			
	(For independent node dissection, see 38770-38780)			
55801	Prostatectomy, perineal, subtotal (including control of postoperative bleeding, during initial hospitalization, vasectomy, meatotomy, urethral calibration and/or dilation, and internal urethrotomy) are included	20.0	90	6.0
55810	prostatectomy, perineal radical	26.0	90	6.0
55812	with lymph node biopsy(s) (limited pelvic lymphadenopathy)	BR		
55815	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	BR		6.0
	(If 55815 is carried out on separate days, use 38771 and 55810)			
55821	Prostatectomy, including control of postoperative bleeding complete (vasectomy, meatotomy, urethral calibration and/or dilation, and interal urethrotomy are included), suprapubic, subtotal, one or two stages	20.0	90	5.0
55831	retropubic, subtotal	20.0	90	5.0
55840	prostatectomy, retropubic radical	26.0	90	6.0
55842	with lymph node biopsy(s) (limited pelvic lymphadenectomy)	BR		
55845	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes	BR		3.0
	with bilateral pelvic lymphadenectomy, including external iliac, hypogastric and obturator nodes			
OTHER PROCEDURES				
	(For artificial insemination, see 58310)			
55899	Unlisted procedure, male genital system	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-305, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-305, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-305, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-305, filed 1/30/74; Order 68-7, § 296-22-305, filed 11/27/68, effective 1/1/69.]

WAC 296-22-306 Intersex surgery.

		Unit Value	Follow-up Days=	Basic Anes@
55970	Intersex surgery; male to female	BR		
55980	Intersex surgery; female to male	BR		

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-306, filed 12/3/80, effective 3/1/81.]

FEMALE GENITAL SYSTEM

(For pelvic laparotomy, see 49000)

(For endometriomas resection, see 49200, 49201)

(For paracentesis, see 49080, 49081)

(For injection procedure for pelvic pneumography, see 49440)

(For secondary closure of abdominal wall evisceration or disruption, see 49900)

(For chemotherapy, see 90790–90793)

WAC 296-22-307 Perineum.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*56000	Incision and drainage of perineal abscess (nonobstetrical) (see also 10060 et seq)	*0.6	0	3.0
EXCISION				
56100	Biopsy of perineum (separate procedure)	0.6	7	3.0
	(For excision of local lesion, see 11420–11426, 11620–11626)			
REPAIR				
56200	Perineoplasty, repair of perineum nonobstetrical, (separate procedure) (see also 56800)	BR		3.0
	(For repair of wounds to genitalia, see 12001–12007, 12041–12047, 13131, 13132)			
	(For repair of recent injury of vagina and perineum, nonobstetrical, see 57210)			
	(For anal sphincteroplasty, see 46750, 46751)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-307, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-307, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-307, filed 1/30/74. Formerly WAC 296-22-335.]

WAC 296-22-310 Vulva and introitus.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
	(For incision and drainage of sebaceous cyst, furuncle, or caruncle, see 10000–10020, 10060, 10061)			
*56400	Incision and drainage, abscess of vulva, extensive	*0.8	0	3.0
*56420	Incision and drainage of Bartholin's gland abscess, unilateral	*1.0	0	3.0
	(For incision and drainage of Skene's gland abscess or cyst, see 53060)			
56440	Marsupialization of Bartholin's gland cyst	4.0	30	3.0
DESTRUCTION				
*56500	Destruction of condylomata, vulva, multiple; simple, chemical	*0.48	0	3.0
*56505	electrodesiccation	*0.8	0	3.0
56507	laser surgery	*1.0	0	3.0
*56510	surgical excision	*1.0	0	3.0
56515	extensive	BR+		3.0
56520	Cryosurgery of benign lesion, vulva; simple	BR		
56521	multiple	BR		
	(For destruction of Skene's gland cyst or abscess, see 53270)			
	(For cautery destruction of urethral caruncle, see 53265)			
EXCISION				
56600	Biopsy of vulva (separate procedure)	0.6	7	3.0
	(For local excision or fulguration of lesion(s) of external genitalia, see 11420–11426, 11620–11626, 17000–17302, 56500–56521)			
56620	Vulvectomy; partial, unilateral or bilateral (but less than 80% of vulvar area)	12.0	60	3.0
56625	complete (skin and subcutaneous tissue), bilateral	15.0	60	3.0
	(For skin graft, see 15000 et seq)			
56630	Vulvectomy, radical; without skin graft	20.0	120	3.0
56635	with inguinofemoral lymphadenectomy, unilateral	24.0	120	5.0
56636	with inguinofemoral lymphadenectomy, bilateral	26.0	120	5.0
56640	vulvectomy, radical, with inguinofemoral, iliac, and pelvic lymphadenectomy; unilateral	26.0	120	5.0
56641	bilateral	30.0	120	5.0
	(For lymphadenectomy, see 38760–38780)			
56680	Clitoridectomy, simple	8.0	30	3.0
56685	extensive	12.0	90	3.0
56700	Hymenectomy, partial excision of hymen	2.4	30	3.0
56710	Plastic revision of hymen	2.4	30	3.0
*56720	Hymenotomy, simple incision	*1.4	0	3.0
56740	Excision of Bartholin's gland or cyst	4.8	30	3.0
	(For excision of Skene's gland, see 53270)			
	(For excision of urethral caruncle, see 53265)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For excision or fulguration of urethral carcinoma, see 53220)			
	(For excision or marsupialization of urethral diverticulum, see 53230–53240)			
REPAIR				
	(For repair of urethra for mucosal prolapse, see 53275)			
56800	Plastic repair of introitus	4.8	30	3.0
SUTURE				
	(For episiorrhaphy, episioperineorrhaphy for recent injury of vulva and/or perineum, nonobstetrical, see 57210)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-22-310, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-310, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-310, filed 1/30/74; Order 68-7, § 296-22-310, filed 11/27/68, effective 1/1/69.]

WAC 296-22-315 Vagina.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
57000	Colpotomy with exploration	4.0	30	3.0
57010	with drainage of pelvic abscess	BR		
*57020	Colpocentesis (separate procedure).....	*0.8	0	3.0
DESTRUCTION				
57050	Cryosurgery of vagina	0.7		3.0
57057	Laser surgery of vagina	2.1		3.0
57060	Electrocautery of vagina	0.7		3.0
57063	Chemical cautery of vagina	0.7		3.0
EXCISION				
57100	Biopsy of vaginal mucosa; simple (separate procedure)	0.72	7	3.0
57105	extensive, requiring suture (including cysts)	BR		3.0
57108	Colpectomy, obliteration of vagina; partial	12.0	60	3.0
	(For excision and/or fulguration of local lesion(s), see 11200–11660, 17000–17300)			
57110	complete	14.0	60	3.0
57120	Colpocleisis (Le Fort type)	12.0	60	3.0
57130	Excision of vaginal septum	BR		3.0
57135	Excision of vaginal cyst or tumor	BR		3.0
INTRODUCTION				
*57150	Irrigation and/or application of medicament for treatment of bacterial, parasitic or fungoid disease	*0.24	0	
*57160	Insertion of pessary	*0.24	0	
57170	Diaphragm fitting with instructions	0.24		
REPAIR				
	(For urethral suspension, (Marshall–Marchetti–Krantz type) abdominal approach, see 51840, 51841)			
57200	Colporrhaphy, suture of injury of vagina (nonobstetrical)	BR	3.0	
57210	Colpoperineorrhaphy, suture of injury of vagina and/or perineum (nonobstetrical)	BR	3.0	
57220	Plastic operation on urethral sphincter, vaginal approach (eg, Kelly urethral plication) (separate procedure)	7.0	60	3.0
57230	Plastic repair of urethrocele (separate procedure)	7.0	60	3.0
57240	Anterior colporrhaphy, repair of cystocele with or without repair of urethrocele (separate procedure).....	8.5	60	4.0
57250	Posterior colporrhaphy, repair of rectocele with or without perineorrhaphy.....	7.0	60	3.0
	(For repair of rectocele (separate procedure) without posterior colporrhaphy, see 45560)			
57260	Combined anteroposterior colporrhaphy;	12.0	60	3.0
57265	with enterocele repair	14.0	60	3.0
57268	Repair of enterocele, vaginal approach (separate procedure)	BR		
57270	Repair of enterocele, abdominal approach (separate procedure) ..	14.0	60	4.0
57280	Colpopexy, abdominal approach.	14.0	60	4.0
57288	Sling operation for stress incontinence (e.g., fascia or synthetic) .	15.0	90	5.0
57289	Pereyra procedure, including anterior colporrhaphy	13.0	90	3.0
	(57290 has been deleted. To report, use 57291, 57292)			
57291	Construction of artificial vagina; without graft	BR		3.0
57292	with graft	BR		3.0
57300	Closure of rectovaginal fistula; vaginal approach	14.5	90	3.0
57305	abdominal approach	18.0	90	5.0
57307	abdominal approach, with concomitant colostomy	20.0	90	5.0
57310	Closure of urethrovaginal fistula	14.5	60	4.0
57320	Closure of vesicovaginal fistula, vaginal approach	14.5	60	4.0
	(For concomitant cystostomy, see 51005–51040 and WAC 296-22-010, item 7a)			
57330	transvesical and vaginal approach.....	BR		5.0
	(For abdominal approach, see 51900)			
MANIPULATION				
*57400	Dilation of vagina under anesthesia	*0.72	0	3.0
*57410	Pelvic examination under anesthesia	*0.72	0	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	ENDOSCOPY			
57450	Culdoscopy, diagnostic;	4.0	15	3.0
57451	with biopsy and/or lysis of adhesions or tubal sterilization	4.0	15	3.0
57452*	Colposcopy; (separate procedure)	1.0	0	
57454*	with biopsies, or biopsy of the cervix	2.0	0	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-315, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-315, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-315, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-315, filed 1/30/74; Order 68-7, § 296-22-315, filed 11/27/68, effective 1/1/69.]

WAC 296-22-325 Cervix uteri.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
	(For radical surgical procedures, see 58200-58240)			
*57500	Biopsy, single or multiple, or local excision of lesion, with or without fulguration, (separate procedure)	*0.6	0	3.0
57505	Endocervical curettage (not done as part of a dilation and curettage)	BR		3.0
*57510	Cauterization of cervix; electro or thermal	*0.6	0	
57511*	cryocautery, initial or repeat	0.6	0	
57513	laser surgery	1.0		3.0
57520	Biopsy of cervix, circumferential (cone) with or without dilation and curettage, with or without Sturmdorff type repair (see also 58120)	4.8	45	3.0
57530	Trachelectomy (cervicectomy), amputation of cervix (separate procedure)	4.8	45	3.0
57540	Excision of cervical stump, abdominal approach;	12.0	45	4.0
57545	with pelvic floor repair	BR		4.0
57550	Excision of cervical stump, vaginal approach;	12.0	45	3.0
57555	with anterior and/or posterior repair	14.5	45	3.0
57556	with repair of enterocele	14.5	45	4.0
	INTRODUCTION			
	(For insertion of intra-uterine device, see 58300)			
*57600	Introduction of any hemostatic agent or pack for spontaneous hemorrhage (separate procedure); initial	*0.72	0	3.0
*57620	subsequent	*0.24	0	3.0
	REPAIR			
57700	Tracheloplasty (Shirodkar or Lash type operation)	6.0	45	3.0
57720	Trachelorrhaphy, plastic repair of uterine cervix, vaginal approach	6.0	45	3.0
	MANIPULATION			
*57800	Dilation of cervical canal, instrumental (separate procedure)	*0.6	0	3.0
57820	Dilation and curettage of cervical stump	4.0	15	3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-325, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-325, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-325, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-325, filed 1/30/74; Order 68-7, § 296-22-325, filed 11/27/68, effective 1/1/69.]

WAC 296-22-330 Corpus uteri.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
*58100	Endometrial biopsy, suction type (separate procedure)	*0.72	0	3.0
58101*	Endometrial washings (e.g., for cytology sampling)	1.0	0	3.0
58102	Office endometrial curettage	2.0	0	3.0
58103	Menstrual extraction	0.5	0	
58120	Dilation and curettage, diagnostic and/or therapeutic (obstetrical) (see also 57520 nonobstetrical)	4.0	15	3.0
	(For postpartum hemorrhage, see 59160)			
58140	Myomectomy, excision of fibroid tumor of uterus, single or multiple, (procedure); abdominal approach	14.0	45	5.0
58145	vaginal approach	BR		5.0
58150	Total hysterectomy (corpus and cervix), with or without removal of tube(s), with or without removal of ovary(s)	16.0	45	5.0
58152	with colpo-urethrocystopexy (Marshall-Marchetti-Krantz type)	BR		5.0
	(For urethrocystopexy without hysterectomy, see 51840, 51841)			
58180	Supracervical hysterectomy (subtotal hysterectomy), with or without tube(s), with or without removal of ovary(s)	16.0	45	5.0
58200	Total hysterectomy, extended, corpus cancer, including partial vaginectomy;	20.0	120	5.0
58205	with bilateral radical pelvic lymphadenectomy	24.0	120	6.0
58210	Total hysterectomy, extended, cervical cancer, with bilateral radical pelvic lymphadenectomy (Wertheim type operation)	30.0	120	7.0
58240	Total hysterectomy or cervicectomy, with removal of bladder and ureteral transplantations, and/or abdominoperineal resection of rectum and colon and colostomy, or any combination thereof (pelvic exenteration)	BR		7.0
58260	Vaginal hysterectomy;	16.0	45	4.0

		Unit Value	Follow-up Days=	Basic Anes@
58265	with plastic repair of vagina, anterior and/or posterior colporrhapy	18.0	45	4.0
58267	with colpo-urethrocystopexy (Marshal-Marchetti-Krantz type)	20.0	90	5.0
58270	with repair of enterocele	18.0	45	4.0
58275	Vaginal hysterectomy, with total or partial colpectomy;	18.0	45	4.0
58280	with repair of enterocele	18.0	45	4.0
58285	Vaginal hysterectomy, radical (Schauta type operation)	24.0	120	7.0
INTRODUCTION				
	(For insertion of radioactive substance into corpus with or without dilation and curettage, see 77520-77550)			
*58300	Insertion of intrauterine device (IUD)	*1.0	0	3.0
58301	Removal of intrauterine device (IUD)	BR		
58310	Artificial insemination	BR		
*58320	Insufflation of uterus and tubes with air and CO_2	*1.0	0	3.0
58340	Injection procedure for hysterosalpingography	0.8	0	
58350*	Hydrotubation of oviduct, including materials	1.0	0	
	(For materials supplied by physician, see 99070)			
REPAIR				
58400	Uterine suspension, with or without shortening of round ligaments, with or without shortening of sacrouterine ligaments; (separate procedure)	12.0	45	4.0
58410	with presacral sympathectomy	14.0	45	5.0
	(Interposition operation has been deleted. If necessary to report, use 58999)			
	(58500 Hysterosalpingostomy has been deleted. To report, use 58752)			
58520	Hysterorrhaphy, repair of ruptured uterus (nonobstetrical)	12.0	45	4.0
58540	Hysteroplasty, repair of uterine anomaly (Strassman type)	14.0	45	4.0
SUTURE				
	(For closure of vesicouterine fistula, see 51920)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-330, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-330, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-330, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-330, filed 1/30/74; Order 68-7, § 296-22-330, filed 11/27/68, effective 1/1/69.]

WAC 296-22-333 Oviduct.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
58600	Transection of fallopian tube, abdominal or vaginal approach, unilateral or bilateral	12.0	45	4.0
58605	Ligation or transection of fallopian tube(s), abdominal or vaginal approach, postpartum, unilateral or bilateral during same hospitalization (separate procedure)	7.0	45	4.0
	(For laparoscopic procedures, see 58980-58987)			
	(58610 Ligation of fallopian tube(s) has been deleted. It would be reported using 58600-58611)			
58611	Ligation or transection of fallopian tube(s) when done at the time of Cesarean section or intra-abdominal surgery (not a separate procedure, included in major procedure.)	BR		4.0
58615	Occlusion of fallopian tube(s) by device (e.g., band, clip, Falope ring, fulguration) vaginal or suprapubic approach	BR		4.0
	(For laparoscopic approach, see 58983)			
	(58618 Lysis of adnexal adhesions has been deleted. To report, use 58740)			
EXCISION				
58700	Salpingectomy, complete or partial, unilateral or bilateral (separate procedure)	12.0	45	4.0
58720	Salpingo-oophorectomy, complete or partial, unilateral or bilateral (separate procedure)	12.0	45	4.0
REPAIR				
58740	Lysis of adhesions (salpingolysis, ovariolysis)	BR		4.0
	(For laparoscopic approach, see 58985)			
58750	Tubotubal anastomosis	BR		4.0
58752	Tubouterine implantation	BR		4.0
58760	Fimrioplasty	BR		4.0
58770	Salpingostomy (salpingoneostomy)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-333, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-333, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-333, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-333, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-333, filed 1/30/74.]

WAC 296-22-337 Ovary.

		Unit Value	Follow-up Days=	Basic Anes@
	OVARY			
	INCISION			
58800	Drainage of ovarian cyst(s), unilateral, or bilateral, (separate procedure); vaginal approach ...	4.0	15	4.0
58805	abdominal approach	12.0	45	4.0
58820	Drainage of ovarian abscess; vaginal approach	4.0	15	4.0
58822	abdominal approach	6.0	15	4.0
	EXCISION			
58900	Biopsy of ovary, unilateral or bilateral (separate procedure)	12.0	45	4.0
58920	Wedge resection or bisection of ovary, unilateral or bilateral	12.0	45	4.0
58925	Ovarian cystectomy, unilateral or bilateral	12.0	45	4.0
58940	Oophorectomy, partial or total, unilateral or bilateral;	12.0	45	4.0
58945	with total omentectomy.....	16.0	60	4.0
	ENDOSCOPY–LAPAROSCOPY			
	The endoscopic descriptors in this publication are listed so that the main procedure can easily be identified without having to list all the minor related procedures that may be performed at the same time (such as lysis of adhesions and fulguration of bleeding points during laparoscopy with fulguration transection of the oviducts). When the secondary procedures involve significant additional time and effort, they may be listed using modifier –50.			
	(For peritoneoscopy, see 49300–49303)			
58980	Laparoscopy for visualization of pelvic viscera;	6.0	10	5.0
58982	with fulguration of oviducts (with or without transection)	8.0	10	5.0
58983	with occlusion of oviducts by device (e.g., band, clip, or Falope ring).....	BR		5.0
	(For vaginal or suprapubic approach), see 58615)			
58984	with fulguration of ovarian or peritoneal lesions.....	8.0	10	5.0
58985	with lysis of adhesions.....	8.0	10	5.0
58986	with biopsy (single or multiple)	8.0	10	5.0
58987	with aspiration (single or multiple).....	8.0	10	5.0
58990	Hysteroscopy	BR		3.0
	OTHER PROCEDURES			
58999	Unlisted procedure, female genital system nonobstetrical	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-337, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-337, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-337, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-337, filed 1/30/74. Formerly WAC 296-22-320.]

MATERNITY CARE AND DELIVERY

WAC 296-22-340 Maternity care and delivery.

NOTES

The services normally required in uncomplicated maternity cases include antepartum care, delivery and postpartum care.

Antepartum care includes usual prenatal services (initial and subsequent history, physical examinations, recording of weight, blood pressure, fetal heart tones, routine chemical urinalyses, maternity counseling).

Delivery includes vaginal delivery (with or without episiotomy, with or without forceps or breech delivery) or Cesarean section, and resuscitation of new born infant when necessary.

Postpartum care includes hospital and office visits following vaginal or Cesarean section delivery.

For medical complications of pregnancy (toxemia, cardiac problems, neurological problems or other problems requiring additional or unusual services or requiring hospitalization), see services in MEDICINE section. For surgical complications of pregnancy not listed below, see appropriate procedures in SURGERY.

If a physician provides all or part of the antepartum and/or postpartum patient care but does not perform the delivery due to termination of pregnancy by abortion or referral to another physician for delivery, see 59420–59430.

(For circumcision of newborn, see 54150–54160)

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
59000	Amniocentesis for diagnostic purposes, abdominal approach ..	1.0	0	
	(For ultrasonic guidance, see 76946, 76947)			
59010*	Amnioscopy	1.0	0	
59011*	Amnioscopy (intraovular)	BR	0	
59020*	Fetal oxytocin stress test	1.0	0	
59025	Fetal nonstress test	1.0		
59030*	Fetal scalp blood sampling;....	1.0	0	
59031*	repeat	0.5	0	
59050	Initiation and/or supervision of internal fetal monitoring during labor by consultant	1.0	0	
	EXCISION			
59100	Hysterotomy, abdominal, for removal of hydatidiform mole;....	14.0	45	5.0
59101	with tubal ligation	14.0	45	6.0
59105	Hysterotomy, abdominal, for legal abortion;.....	16.0	45	6.0
59106	with tubal ligation	18.0	45	6.0
	EXCISION			
59120	Surgical treatment of ectopic pregnancy; tubal, requiring salpingectomy and/or oophorectomy, abdominal or vaginal approach.....	14.0	45	5.0

		Unit Value	Follow-up Days=	Basic Anes@
59121	tubal, without sanpingectomy and/or oophorectomy	BR		5.0
59125	ovarian, requiring oophorectomy and/or sanpingectomy	BR		5.0
59126	ovarian, without oophorectomy and/or sanpingectomy	BR		
59130	abdominal	BR		5.0
59135	interstitial, uterine pregnancy requiring hysterectomy, total or subtotal	BR		5.0
59140	cervical	BR		5.0
59160	Dilation and curettage for postpartum hemorrhage (separate procedure)	4.0	15	3.0
	INTRODUCTION			
	(For intrauterine fetal transfusion, see 36460)			
	(For introduction of hypertonic solution and/or prostaglandins to initiate labor, see 59850)			
	REPAIR			
	(For tracheloplasty, see 57700)			
59300	Episiotomy or vaginal repair only, by other than delivering physician; simple	2.0	0	3.0
59305	extensive	BR		3.0
59350	Hysterorrhaphy of ruptured uterus; (separate procedure)	BR		3.0
59351	following dilation and curettage, including both procedures	BR		3.0
	DELIVERY, ANTEPARTUM AND POSTPARTUM CARE			
59400	Total obstetrical care (all-inclusive, "global" care) includes antepartum care, vaginal delivery (with or without episiotomy, and/or forceps or breech delivery) and postpartum care	8.0	45	3.0
59410	Vaginal delivery only (with or without episiotomy, forceps or breech delivery) including in-hospital postpartum care (separate procedure)	4.0	45	3.0
59420	Antepartum care only (separate procedure)	Sv.&		
59430	Postpartum care only (separate procedure)	Sv.&		
	CESAREAN SECTION			
	(For standby attendance of infant, see 99151)			
59500	Cesarean section, low cervical, including in-hospital postpartum care; (separate procedure)	10.0	7	5.0
59501	including antepartum and postpartum care	13.0	45	5.0
59520	Cesarean section, classic, including in-hospital postpartum care; (separate procedure)	10.0	7	5.0
59521	including antepartum and postpartum care	13.0	45	5.0
59540	Cesarean section, extraperitoneal, including in-hospital postpartum care; (separate procedure)	12.0	7	5.0
59541	including antepartum and postpartum care	16.0	45	5.0
59560	Cesarean section with hysterectomy, subtotal, including in-hospital postpartum care; (separate procedure)	12.0	7	6.0
59561	including antepartum and postpartum care	16.0	45	6.0
59580	Cesarean section with hysterectomy, total, including in-hospital postpartum care; (separate procedure)	12.0	7	6.0
59581	including antepartum and postpartum care	16.0	45	6.0
	ABORTION			
59800	Treatment of abortion, first trimester; completed medically	Sv.&		
59801	completed surgically (separate procedure)	4.0	45	3.0
59810	Treatment of abortion, second trimester; completed medically	Sv.&		
59811	completed surgically (separate procedure)	4.0	45	3.0
59820	Treatment of missed abortion, any trimester, completed medically or surgically	Sv.&		3.0
59830	Treatment of septic abortion	Sv.&		
59840	Legal (therapeutic) abortion, by dilation and curettage, and/or vacuum extraction	6.0	45	3.0
59841	Legal (therapeutic) abortion, by dilation and evacuation	6.0	45	3.0
59850	Legal (therapeutic) abortion, by one or more intra-amniotic injections (amniocentesis-injections) (including hospital admission and visits, delivery of fetus and secundines);	6.0	45	5.0
59851	with dilation and curettage	BR		
59852	with hysterotomy (failed saline)	BR		
	OTHER PROCEDURES			
59899	Unlisted procedure, maternity care and delivery	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-340, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-340, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-340, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-340, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-340, filed 1/30/74; Order 68-7, § 296-22-340, filed 11/27/68, effective 1/1/69.]

ENDOCRINE SYSTEM

(For pituitary and pineal surgery, see Nervous system)

WAC 296-22-350 Thyroid gland.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*60000	Incision and drainage of thyroglossal cyst, infected	*0.6	0	3.0
	EXCISION			
*60100	Biopsy, thyroid, percutaneous needle	1.2	7	

		Unit Value	Follow-up Days=	Basic Anes@
	(For ultrasonic guidance, see 76942, 76943)			
60200	Excision of cyst or adenoma of thyroid, or transection of isthmus	9.5	45	5.0
60220	Total thyroid lobectomy, unilateral	14.0	45	5.0
60225*	with contralateral subtotal lobectomy, including isthmus	14.0	45	5.0
60240	Thyroidectomy; total or complete	16.0	45	5.0
60242	near total	14.0	45	5.0
60245	Thyroidectomy, subtotal or partial;	14.5	45	5.0
60246	with removal of substernal thyroid gland, cervical approach	BR		5.0
60252	Thyroidectomy, total or subtotal for malignancy; with limited neck dissection	24.0	180	5.0
60254	with radical neck dissection	28.0	180	6.0
	(For parathyroid transplant, see 60510)			
60260	Thyroidectomy, secondary; unilateral	15.0	45	5.0
60261	bilateral	18.0	45	5.0
60270	Thyroidectomy, including substernal thyroid gland, sternal split or transthoracic approach	BR	45	5.0
60280	Excision of thyroglossal duct cyst or sinus	11.0	45	4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-350, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-350, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-350, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-350, filed 1/30/74; Order 68-7, § 296-22-350, filed 11/27/68, effective 1/1/69.]

WAC 296-22-355 Parathyroid, thymus, adrenal glands and carotid body.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
	(For pituitary and pineal surgery, see Nervous System)			
60500	Parathyroidectomy or exploration of parathyroid(s);	18.0	45	5.0
60505	with mediastinal exploration, sternal split or transthoracic approach	24.0	60	12.0
60510	Transplantation of parathyroid gland(s) during thyroidectomy	BR		12.0
60520	Thymectomy, partial or total (separate procedure)	18.0	60	12.0
60540	Adrenalectomy, partial or complete, or exploration of adrenal with or without biopsy, transabdominal, lumbar or dorsal (separate procedure), unilateral;	19.0	90	9.0
60545	with excision of adjacent retroperitoneal tumor	22.0	90	9.0
60550	Adrenalectomy, partial or complete, or exploration of adrenal gland with or without biopsy, transabdominal, lumbar or dorsal, bilateral; one stage	24.0	90	9.0
60555	two stages	BR		9.0
60600	Excision of carotid body tumor; without excision of carotid artery	17.0	60	8.0
60605	with excision of carotid artery	24.0	60	8.0
60699	Unlisted procedure, endocrine system	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-355, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-355, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-355, filed 1/30/74; Order 68-7, § 296-22-355, filed 11/27/68, effective 1/1/69.]

NERVOUS SYSTEM

WAC 296-22-365 Skull, meninges, and brain.

		Unit Value	Follow-up Days=	Basic Anes@
	(For injection procedure for cerebral angiography, see 36100-36220)			
	(For injection procedure for ventriculography, see 61025, 61030, 61120, 61130)			
	(For injection procedure for pneumoencephalography, see 61053, 62286)			
	PUNCTURE FOR INJECTION, DRAINAGE OR ASPIRATION			
*61000	Subdural tap through fontanelle (infant); unilateral or bilateral; initial	*2.0	0	
*61001	subsequent taps	*1.4	0	
*61020	Ventricular puncture through previous burr hole, fontanelle, or implanted ventricular catheter/reservoir; without injection	*2.0	0	
	(61025 has been deleted. To report, use 61026)			
61026*	with injection of drug or other substance for diagnosis or treatment	BR		7.0
	(61030, 61045 have been deleted. To report, use 61026)			
*61050	Cisternal or lateral cervical puncture; without injection (separate procedure)	*1.8	0	
	(61051, 61052, and 61053 have been deleted. To report, use 61055)			
61055*	with injection of drug or other substance for diagnosis or treatment	BR		6.0
61070*	Puncture of shunt tubing or reservoir for aspiration or injection procedure	2.0	0	0

		Unit Value	Follow-up Days=	Basic Anes@
BURR HOLE(S) OR TREPHINE				
61105	Twist drill hole for subdural or ventricular puncture; not followed by other surgery	BR		
61106	followed by other surgery	BR		
61107	for implanting ventricular catheter or pressure recording device	8.0	30	7.0
61120	Burr hole(s) for ventricular puncture (including injection of gas, contrast media, dye, or radioactive material); not followed by other surgery	10.0	30	7.0
61130	followed by other surgery	7.0	0	
61140	Burr hole(s) or trephine; for biopsy of brain or intracranial lesion	20.0	0	5.0
61150	Burr hole(s) for drainage of brain abscess or cyst	24.0	90	9.0
61151	subsequent tappingaspiration of intracranial abscess or cyst	2.0	0	4.0
61154	Burr hole(s); for evacuation and/or drainage of hematoma, extradural or subdural; unilateral	26.0	90	9.0
61155	bilateral	39.0	90	9.0
61156	for aspiration of hematoma or cyst, intracerebral	25.0	90	9.0
61210	for implanting ventricular catheter, reservoir, or pressure recording device (separate procedure)	8.0	30	7.0
61215	Insertion of subcutaneous reservoir, pump or continuous infusion system for connection to ventricular catheter	BR		7.0
61250	Burr hole(s) or trephine, supratentorial, exploratory, not followed by other surgery; unilateral	15.0	30	7.0
61251	bilateral	22.0	30	7.0
61253	Burr hole(s) or trephine, infratentorial, unilateral or bilateral	BR		
	(If burr hole(s) or trephine followed by craniotomy at same operative session, use 61304–61321; do not use 61250, 61251, or 61253)			
CRANIECTOMY OR CRANIOTOMY				
61304	Craniectomy or craniotomy, exploratory; supratentorial	34.0	90	9.0
61305	infratentorial (posterior fossa)	40.0	90	10.0
61310	Craniectomy or craniotomy, evacuation of hematoma, extradural, subdural or intracerebral; supratentorial	28.0	90	13.0
61311	infratentorial	26.0	90	13.0
61320	Craniectomy or craniotomy, drainage of intracranial abscess; supratentorial	28.0	90	11.0
61321	infratentorial	28.0	90	13.0
61330	Decompression of orbit only, transcranial approach; unilateral	26.0	90	9.0
61331	bilateral	BR		9.0
61332	Exploration of orbit (transcranial approach); with biopsy	BR		9.0
61333	with removal of lesion	BR		9.0
61334	with removal of foreign body	BR		9.0
61340	Other cranial decompression (e.g., subtemporal), supratentorial; unilateral	16.0	90	9.0
61341	bilateral	24.0	90	9.0
61345	Other cranial decompression, posterior fossa	22.0	90	13.0
	(For orbital decompression by lateral wall approach, Kroenlein type, see 67440)			
61440	Craniotomy for section of tentorium cerebelli (separate procedure)	BR		10.0
61450	Craniectomy for section, compression, or decompression of sensory root of gasserian ganglion	28.0	90	10.0
61458	Craniectomy, suboccipital; for exploration or decompression of cranial nerves	30.0	90	10.0
61460	for section of one or more cranial nerves	34.0	90	10.0
61470	for medullary tractotomy	40.0	90	11.0
61480	for mesencephalic tractotomy or pedunculotomy	40.0	90	11.0
61490	Craniotomy for lobotomy, including cingulotomy; unilateral	24.0	90	9.0
61491	bilateral	30.0	90	11.0
61500	Craniectomy; for tumor or other bone lesion of skull	BR		8.0
61501	for osteomyelitis	BR		8.0
61510	Craniectomy, trephination, bone flap craniotomy; for excision of brain tumor, supratentorial; except meningioma	34.0	90	12.0
61512	for excision of meningioma, supratentorial	40.0	90	11.0
61514	for excision of brain abscess, supratentorial	32.0		9.0
61516	for excision or fenestration of cyst, supratentorial	30.0		11.0
61518	Craniectomy for excision of brain tumor, infratentorial or posterior fossa; except meningioma or cerebellopontine angle tumor, or midline tumor at base of skull	40.0	90	11.0
61519	meningioma	44.0	90	13.0
61520	cerebellopontine angle tumor	40.0	90	11.0
61521	midline tumor at base of skull	BR		11.0
61522	Craniectomy, infratentorial or posterior fossa; for excision of brain abscess	30.0	90	13.0
61524	for excision or fenestration of cyst	30.0	90	13.0
61526	Craniectomy, bone flap craniotomy, transtemporal (mastoid) for excision of cerebellopontine angle tumor;	30.0	90	13.0
61530	combined with middle/posterior fossa craniotomy	BR		13.0
61532	Craniectomy, trephination, bone flap craniotomy; for excision of intracranial vascular malformation	BR		13.0
61533	for insertion of eipdural electrode array	BR		9.0
	(For continuous EEG monitoring, see 95950–95954)			
61534	for excision of epileptogenic focus without electrocorticography during surgery	BR		9.0

		Unit Value	Follow-up Days=	Basic Anes@
61535	for removal of epidural electrode array, without excision of cerebral tissue (separate procedure)	BR		9.0
61536	for excision of cerebral, epileptogenic focus with electrocorticography during surgery (includes removal of electrode array)	BR		9.0
61538	for lobectomy with electrocorticography during surgery, temporal lobe	38.0	90	9.0
61539	for lobectomy with electrocorticography during surgery, other than temporal lobe, partial or total	38.0	90	9.0
61541	for transection of corpus callosum	BR		9.0
61542	for total hemispherectomy	48.0	90	9.0
61543	for partial or subtotal hemispherectomy	BR		9.0
61544	for excision or coagulation of choroid plexus	30.0	90	11.0
61546	Craniotomy for hypophysectomy; intracranial approach	34.0	90	10.0
61548	Hypophysectomy, transnasal or transseptal approach, nonstereotactic	BR		4.0
	(For stereotaxis, see 61715)			
61550	Craniectomy for craniostenosis; single suture	18.0	90	9.0
61552	multiple sutures, one stage	22.0	90	9.0
61553	each stage of multiple stages	BR		9.0
61555	Reconstruction of skull by multiple bone flaps	BR		9.0
	(For cranial reconstruction for orbital hypertelorism, see 21260–21263)			
	(For sequestrectomy for osteomyelitis, see 21020)			
61561	Reconstruction of skull by orbital advancement, including suturotomy or craniotomy; unilateral	BR		9.0
61562	bilateral	BR		9.0
61570	Craniectomy or craniotomy for excision of foreign body from brain	BR		9.0
61571	for penetrating wound of brain	BR		9.0
	SURGERY FOR ANEURYSM OR ARTERIOVENOUS MALFORMATION			
	(For excision of vascular malformation, see 61532)			
61700	Surgery of intracranial aneurysm, intracranial approach; carotid circulation	40.0	90	13.0
61702	vertebral–basilar circulation	44.0	90	15.0
61703	Surgery of intracranial aneurysm, cervical approach by application of occluding clamp to cervical carotid artery (Selverstone–Crutchfield type)	BR		7.0
	(For cervical approach for direct ligation of carotid artery, see 37600–37606)			
61705	Surgery of aneurysm, vascular malformation or carotid–cavernous fistula; by intracranial and cervical occlusion of carotid artery	32.0	90	15.0
61708	by intracranial electrothrombosis	30.0	90	9.0
61710	by intra–arterial embolization, injection procedure or balloon catheter	24.0	90	9.0
61711	Anastomosis, arterial, extracranial–intracranial (e.g., middle cerebral/cortical) arteries	36.0	90	15.0
	(For carotid or vertebral thromboendarterectomy, see 35300)			
61712	Microdissection, intracranial or spinal procedure (list separately in addition to code for primary procedure)	BR		9.0
	STEREOTAXIS			
	(For nonstereotaxis, see 61548)			
61720	Stereotactic lesion, any method, including burr hole(s) and localizing and recording techniques, single or multiple stages; globus pallidus or thalamus	38.0	90	8.0
61735	subcortical structure other than globus pallidus or thalamus	38.0	90	8.0
61750	Stereotactic biopsy, aspiration or excision, including burr hole(s) for intracranial lesion	BR		8.0
61751	with computerized axial tomography	BR		8.0
61780	Stereotactic localization, including burr hole(s), ventriculography and introduction of subcortical electrodes	BR+		8.0
61790	Stereotactic lesion of gasserian ganglion, percutaneous, by neurolytic agent (e.g., alcohol, thermal, electrical, radiofrequency)	18.0	90	7.0
	NEUROSTIMULATORS, INTRACRANIAL			
61850	Burr or twist drill hole(s) for implantation of neurostimulator electrodes; cortical	15.0	30	8.0
61855	subcortical	18.0	30	8.0
61860	Craniectomy or craniotomy for implantation of neurostimulator electrodes, cerebral; cortical	15.0	30	6.0
61865	subcortical	18.0	30	6.0
61870	Craniectomy for implantation of neurostimulator electrodes, cerebellar; cortical	18.0	30	7.0
61875	subcortical	19.0	30	7.0
61880	Revision or removal of intracranial neurostimulator electrodes	BR		7.0
61885	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		7.0
61888	Revision or removal of intracranial neurostimulator receiver	BR		7.0
	(See WAC 296-22-010, item 2)			
	REPAIR			
62000	Elevation of depressed skull fracture; simple, extradural	18.0	90	9.0

		Unit Value	Follow-up Days=	Basic Anes@
62005	compound or comminuted, extradural	24.0	90	9.0
62010	with debridement of brain and repair of dura	29.0	90	11.0
62100	Repair of dural/CSF leak, including surgery for rhinorrhea/otorrhea	30.0	90	9.0
	(For repair of spinal dural/CSF leak, see 63708)			
62120	Repair of encephalocele, including cranioplasty	BR		9.0
62140	Cranioplasty for skull defect, up to 5 cm diameter	20.0	90	9.0
62141	larger than 5 cm diameter	BR		9.0
62142	Removal of bone flap or prosthetic plate of skull	BR		9.0
62145	Cranioplasty for skull defect with reparative brain surgery	BR+		11.0
CSF SHUNT				
62180	Ventriculocisternostomy (Torkildsen type operation)	32.0	90	11.0
62190	Creation of shunt; subdural–atrial, –jugular, –auricular	24.0	90	9.0
62192	subdural–peritoneal, –pleural, –other terminus	22.0	90	9.0
62194	Replacement or irrigation, subdural catheter	6.0	90	5.0
62200	Ventriculocisternostomy, third ventricle	32.0	90	11.0
62220	Creation of shunt; ventriculo–atrial, –jugular, –auricular	26.0	90	11.0
62223	ventriculo–peritoneal, –pleural, –other terminus	24.0	90	9.0
62225	Replacement or irrigation, ventricular catheter	10.0	90	5.0
62230	Replacement or revision of shunt, obstructed valve, or distal catheter in shunt system	20.0	90	11.0
62256	Removal of complete shunt system; without replacement	10.0	90	11.0
62258	with replacement by similar or other shunt at same operation	3.0	0	9.0
	(For percutaneous irrigation or aspiration of shunt reservoir, see 61070)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-365, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-365, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-365, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-365, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-365, filed 1/30/74; Order 68-7, § 296-22-365, filed 11/27/68, effective 1/1/69.]

WAC 296-22-370 Spine and spinal cord.

		Unit Value	Follow-up Days=	Basic Anes@
	(For application of caliper or tongs, see 20660)			
	(For treatment of fracture or dislocation of spine, see 22305-22327)			
PUNCTURE FOR INJECTION, DRAINAGE OR ASPIRATION				
62268*	Percutaneous aspiration, spinal cord cyst or syrinx	BR		
	(For CT guidance, see 76365, 76366; for ultrasonic guidance, see 76938, 76939)			
62269*	Biopsy of spinal cord, percutaneous needle	BR		
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943)			
62270*	Spinal puncture, lumbar; diagnostic	1.6	0	
62272*	Spinal puncture, therapeutic, for drainage of spinal fluid (by needle or catheter)	BR		
62273*	Injection, lumbar epidural, of blood or clot patch	2.1		
62274*	Injection of anesthetic substance, diagnostic or therapeutic; subarachnoid or subdural, simple	2.1	0	
62276*	subarachnoid or subdural, differential	3.5	0	
62277*	subarachnoid or subdural, continuous	3.0		
62278*	epidural or caudal, single	2.1	0	
62279*	epidural or caudal, continuous	3.0		
62280*	Injection of neurolytic substance (e.g., alcohol, phenol, iced saline solutions); subarachnoid	5.0		
62282*	epidural or caudal	5.0		
62284*	Injection procedure for myelography, spinal or posterior fossa	3.0	7	
62286*	Injection procedure for pneumoencephalography, lumbar	4.0	7	
62288*	Injection of substance other than anesthetic, contrast, or neurolytic solutions; subarachnoid (separate procedure)	BR		
62289*	Injection of substance other than anesthetic, contrast, or neurolytic solutions; epidural or caudal	2.8		
62290*	Injection procedure for diskography, single or multiple levels; lumbar	2.8		
62291*	cervical	2.8		
62292	Injection procedure for chemonucleolysis; including diskography, intervertebral disc; one or more levels–lumbar	13.0	180	4.0
62293	Cervical	13.0	180	4.0
62294*	Injection procedure, arterial, for occlusion of arteriovenous malformation, spinal	2.8		
LAMINECTOMY OR LAMINOTOMY, FOR EXPLORATION OR DECOMPRESSION				
62295	Laminectomy for exploration of intraspinal canal, one or two segments; cervical	32	90	8.0
62296	thoracic	32.0	90	8.0
62297	lumbar	26.0	90	8.0
62299	sacral	26.0	90	8.0
62301	Laminectomy for exploration of intraspinal canal, more than two segments; cervical	BR		9.0
62302	thoracic	BR		8.0
62303	lumbar	BR		7.0
63001	Laminectomy for decompression of spinal cord and/or cauda equina, one or two segments; cervical	30.0	90	9.0

		Unit Value	Follow-up Days=	Basic Anes@
63003	thoracic	30.0	90	8.0
63005	lumbar, except for spondylolisthesis	24.0	90	7.0
63010	lumbar for spondylolisthesis (Gill type procedure)	28.0	90	7.0
63011	sacral	24.0	90	7.0
63015	Laminectomy for decompression of spinal cord and/or cauda equina, more than two segments; cervical	BR		8.0
63016	thoracic	BR		7.0
63017	lumbar	BR		7.0
	(When followed by arthrodesis, see 22550–22565)			
63020	Laminotomy (hemilaminectomy), for herniated intervertebral disk, and/or decompression of nerve root; one interspace, cervical, unilateral	26.0	90	9.0
63021	one interspace, cervical, bilateral	28.0	90	9.0
63030	one interspace, lumbar, unilateral	25.0	90	7.0
63031	one interspace, lumbar, bilateral	27.0	90	7.0
63035	additional interspaces, cervical or lumbar	BR		9.0
63040	Laminotomy (hemilaminectomy), for herniated intervertebral disk, and/or decompression of nerve root, any level, extensive or reexploration; cervical	BR		9.0
63041	thoracic	BR		8.0
63042	lumbar	BR		7.0
	(When followed by arthrodesis, see 22550–22565)			
	(Do not use both 63035 and 63040–63042 for same procedure)			
63060	Hemilaminectomy (laminectomy) for herniated intervertebral disk, thoracic; posterior approach	28.0	90	8.0
63064	costovertebral approach	30.0	90	8.0
63065	Transthoracic approach for herniated intervertebral disk or other mass lesion, thoracic spine	32.7	90	8.0
63075	Diskectomy, cervical, anterior approach, without arthrodesis; single interspace	26.0	90	9.0
63076	additional interspaces	5.0		9.0
	(For diskectomy with arthrodesis, see 22550–22566)			

INCISION

63170	Laminectomy for myelotomy (Bischof type), thoracic or thoracolumbar	BR	90	8.0
63180	Laminectomy and section of dentate ligaments, with or without dural graft, cervical; one or two segments	38.0	90	8.0
63182	more than two segments	BR		8.0
63185	Laminectomy for rhizotomy; one or two segments	28.0	90	8.0
63190	more than two segments	BR		8.0
63191	Laminectomy for section of spinal accessory nerve; unilateral	BR		8.0
63192	bilateral	BR		8.0
	(For resection of sternocleidomastoid muscle, use 21720)			
63194	Laminectomy for cordotomy, unilateral, one stage; cervical	32.0	90	8.0
63195	thoracic	32.0	90	7.0
63196	Laminectomy for cordotomy, bilateral, one stage; cervical	32.0	90	8.0
63197	thoracic	32.0	90	7.0
63198	Laminectomy for cordotomy, bilateral, two stages within fourteen days; cervical	40.0	90	8.0
63199	thoracic	40.0	90	7.0

EXCISION FOR LESION OTHER THAN HERNIATED INTERVERTEBRAL DISK

63210	Laminectomy, one or two segments, for excision of intraspinal lesion; cervical	34.0	90	8.0
63215	thoracic	34.0	90	7.0
63220	lumbar	30.0	90	7.0
63225	sacral	30.0	90	7.0
63240	Laminectomy, more than two segments, for excision of intraspinal lesion; cervical	BR		9.0
63241	thoracic	BR		8.0
63242	lumbar	BR		7.0
63250	Laminectomy for excision or occlusion of arteriovenous malformation of cord; cervical	BR		9.0
63251	thoracic	BR		8.0

STEREOTAXIS

63600	Stereotactic lesion of spinal cord, percutaneous, any modality (including stimulation and/or recording)	18.0	90	7.0
63610	Stereotactic stimulation of spinal cord, percutaneous, separate procedure not followed by other surgery	8.0	0	7.0
63615	Stereotactic biopsy, aspiration, or excision of lesion, spinal cord	BR		7.0

NEUROSTIMULATORS, SPINAL

63650	Percutaneous implantation of neurostimulator electrodes; epidural	BR		7.0
63652	intradural (spinal cord)	BR		8.0
63655	Laminectomy for implantation of neurostimulator electrodes; epidural	BR		7.0
63656	endodural	BR		7.0
63657	subdural	BR		7.0
63658	spinal cord (dorsal or ventral)	BR		7.0
63660	Revision or removal of spinal neurostimulator electrodes	BR		7.0
63685	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		7.0
63688	Revision or removal of spinal neurostimulator receiver	BR		7.0

REPAIR

63700	Repair of meningocele; less than 5 cm diameter	20.0	90	9.0
63702	larger than 5 cm diameter	BR		9.0
63704	Repair of myelomeningocele; less than 5 cm diameter	BR		9.0
63706	larger than 5 cm diameter	BR		9.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For complex skin closure, see Integumentary System)			
63708	Repair dural/CSF leak	BR		9.0
63710	Dural graft, spinal	BR		9.0
	(For laminectomy and section of dentate ligaments, with or without dural graft, cervical, see 63180–63182)			
	SHUNT, SPINAL CSF			
63740	Creation of shunt, lumbar, subarachnoid–peritoneal, –pleural or other including laminectomy	26.0	90	9.0
63744	Replacement, irrigation or revision of lumbar–subarachnoid shunt	10.0	90	5.0
63746	Removal of entire lumbosubarachnoid shunt system without replacement	10.0	90	5.0
63750	Insertion, subarachnoid catheter with reservoir and/or pump for intermittent or continuous infusion of drug, including laminectomy	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–22–370, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–22–370, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–22–370, filed 11/30/81, effective 1/1/82; 80–18–055 (Order 80–25), § 296–22–370, filed 12/3/80, effective 3/1/81; Order 74–7, § 296–22–370, filed 1/30/74; Order 68–7, § 296–22–370, filed 11/27/68, effective 1/1/69.]

WAC 296-22-375 Extracranial nerves, peripheral nerves and autonomic nervous system.

		Unit Value	Follow-up Days=	Basic Anes@
	(For intracranial surgery on cranial nerves, see 61450, 61460, 61790)			
	INTRODUCTION/INJECTION OF ANESTHETIC AGENT (NERVE BLOCK), DIAGNOSTIC OR THERAPEUTIC SOMATIC NERVES			
	Anesthetic Agent (diagnostic or therapeutic)			
	(For anesthesia services in conjunction with surgical procedures, see Anesthesia section)			
	Somatic			
64400*	Injection, anesthetic agent; trigeminal nerve, any division or branch	*3.0	0	
64402*	facial nerve	*2.5	0	
64405*	greater occipital nerve	*2.5	0	
64408*	vagus nerve	*2.5	0	
64410*	phrenic nerve	*2.5	0	
64412*	spinal accessory nerve	*2.5	0	
64413*	cervical plexus	*2.5	0	
64415*	brachial plexus	*2.5	0	
64417*	axillary nerve	*2.5	0	
64418*	suprascapular nerve	2.0	0	
64420*	intercostal nerve, single	*2.0	0	
64421*	intercostal nerves, multiple, regional block	*2.5	0	
64425*	ilioinguinal, iliohypogastric nerves	*2.0	0	
64430*	pudendal nerve	*2.5	0	
64435*	paracervical (uterine) nerve	*2.5	0	
64440*	paravertebral nerve (thoracic, lumbar, sacral, coccygeal), single	*3.0	0	
64441*	paravertebral nerves, multiple, regional block	*3.2	0	
64442*	paravertebral facet joint nerve, lumbar, single level	2.5	0	
64443*	paravertebral facet joint nerve, lumbar, each additional level	0.5	0	
64445*	sciatic nerve	*2.5	0	
64450*	other peripheral nerve or branch	*2.0	0	
	(For phenol destruction, see 64600–64640)			
	(For subarachnoid or subdural, see 62274–62277)			
	(For epidural or caudal, see 62278, 62279)			
	SYMPATHETIC NERVES			
64505*	Injection, anesthetic agent; sphenopalatine ganglion	*3.0	0	
64508*	carotid sinus (separate procedure)	*2.5	0	
64510*	stellate ganglion (cervical sympathetic)	*2.0	0	
64520*	lumbar or thoracic (paravertebral sympathetic)	*3.0	0	
64530*	celiac plexus, with or without radiologic monitoring	*4.0		
	NEUROSTIMULATORS, PERIPHERAL NERVE			
64550	Application of surface (transcutaneous) neurostimulator	BR		
64553	Percutaneous implantation of neurostimulator electrodes; cranial nerve	BR		
64555	peripheral nerve	BR		
64560	autonomic nerve	BR		
64565	neuromuscular	BR		
64573	Incision for implantation of neurostimulator electrodes; cranial nerve	BR		
64575	peripheral nerve	BR		
64577	autonomic nerve	BR		
64580	neuromuscular	BR		
64585	Revision or removal of peripheral neurostimulator electrodes	BR		
64590	Incision for subcutaneous placement of neurostimulator receiver, direct or inductive coupling	BR		
64595	Revision or removal of peripheral neurostimulator receiver	BR		
	DESTRUCTION BY NEUROLYTIC AGENT (E.G., CHEMICAL, THERMAL, ELECTRICAL, RADIOFREQUENCY) SOMATIC NERVES			
64600	Destruction by neurolytic agent, trigeminal nerve; supraorbital, infraorbital, mental, or inferior alveolar branch	5.0	7	
64605	second and third division branches at foramen ovale	5.0	30	
64610	second and third division branches at foramen ovale under radiologic monitoring	5.0	30	
64620	Destruction by neurolytic agent; intercostal nerve	4.0	7	
64622	paravertebral facet joint nerve,			

		Unit Value	Follow-up Days=	Basic Anes@
	lumbar, single level	BR		
64623	paravertebral facet joint nerve, lumbar, each additional level	BR		
64630	pudendal nerve	5.0		
64640	Other peripheral nerve or branch	5.0		
	SYMPATHETIC NERVES			
64680	Destruction by neurolytic agent, celiac plexus, with or without radiologic monitoring	6.0	7	
	EXPLORATION, NEUROLYSIS OR NERVE DECOMPRESSION (NEUROPLASTY)			
	Decompression or freeing of intact nerve from scar tissue, including external neurolysis and transposition			
	(For internal neurolysis by dissection, see 64727)			
	(For facial nerve decompression, see 69720)			
64702	Neurolysis; digital, one or both, same digit	4.8	90	3.0
64704	nerve of hand or foot	8.0	90	3.0
64708	Neurolysis, major peripheral nerve; arm or leg; other than specified	12.0	90	3.0
64712	sciatic nerve	BR		3.0
64713	brachial plexus	BR		3.0
64714	lumbar plexus	BR		3.0
64716	Neurolysis and/or transposition; cranial nerve (specify)	BR		3.0
64718	ulnar nerve at elbow	15.0	90	3.0
64719	ulnar nerve at wrist	9.0	90	3.0
64721	median nerve at carpal tunnel	10.0	90	3.0
64722	Decompression; unspecified nerve(s) (specify)	BR		
64726	plantar digital nerve	6.0	90	3.0
64727	Internal neurolysis by dissection, with or without microdissection (list separately in addition to code for primary neuroplasty)	BR		3.0
	INTRODUCTION/INJECTION OF ANESTHETIC AGENT (NERVE BLOCK), DIAGNOSTIC OR THERAPEUTIC SOMATIC NERVES			
	TRANSECTION OR AVULSION OR NERVES			
	(For steriotactic lesion of gasserian ganglion, see 61790)			
64732	Transection or avulsion of; supraorbital nerve	7.0	30	3.0
64734	infraorbital nerve	7.0	30	3.0
64736	mental nerve	7.0	30	3.0
64738	inferior alveolar nerve by osteotomy	10.0	30	3.0
64740	lingual nerve	BR		3.0
64742	facial nerve, differential or complete	BR		3.0
64744	greater occipital nerve	7.0	30	3.0
	(For section of recurrent laryngeal nerve, see 31595)			
64746	phrenic nerve	5.0	30	3.0
	(For section of recurrent laryngeal nerve, see 31595)			
64752	vagus nerve (vagotomy), transthoracic	14.0	45	11.0
64755	vagi limited to proximal stomach (selective proximal vagotomy, proximal gastric vagotomy, parietal cell vagotomy, supra- or highly selective vagotomy)	BR	45	3.0
64760	vagus nerve (vagotomy), abdominal	14.0	45	6.0
64761	pudendal nerve, unilateral	BR		6.0
64762	pudendal nerve, bilateral	BR		6.0
64763	Transection or avulsion of obturator nerve, extrapelvic, with or without adductor tenotomy; unilateral	6.0	45	3.0
64764	bilateral	9.0	45	3.0
64766	Transection or avulsion of obturator nerve, intrapelvic, with or without adductor tenotomy; unilateral	10.0	60	4.0
64768	bilateral	13.0	60	4.0
64771	Transection or avulsion of other cranial nerve, extradural	BR		3.0
64772	Transection or avulsion of other spinal nerve, extradural	BR		3.0
	EXCISION			
	(For excision of tender scar, skin and subcutaneous tissues with or without tiny neuroma, see 11400–11460, 13000–13300)			
	EXCISION–SOMATIC NERVES			
	(For Morton neurectomy, see 28080)			
64774	Excision of neuroma; cutaneous nerve, surgically identifiable	3.0	30	3.0
64776	digital nerve, one or both, same digit	3.0	30	3.0
64778	digital nerve, each additional digit (list separately by this number)	2.0		
64782	hand or foot, except digital nerve	6.0	30	3.0
64783	hand or foot, each additional nerve, except same digit (list separately by this number)	3.0	30	3.0
64784	major peripheral nerve except sciatic	10.0	30	3.0
64786	sciatic nerve	BR		3.0
64787	Insertion of plastic cap on nerve end	BR		3.0
64788	Excision of neurofibroma or neurolemmoma, cutaneous nerve	6.0	30	3.0
64790	major peripheral nerve	BR		3.0
64792	extensive (including malignant type)	BR		3.0
64795	Biopsy of nerve	BR		
	EXCISION–SYMPATHETIC NERVES			
64802	Sympathectomy, cervical; unilateral	14.5	60	6.0
64803	bilateral	19.0	60	6.0
64804	Sympathectomy, cervicothoracic; unilateral, one stage	20.0	60	6.0
64806	bilateral or two stage unilateral	28.0	60	8.0
64809	Sympathectomy, thoracolumbar; unilateral	20.0	60	6.0
64811	bilateral	28.0	60	8.0

		Unit Value	Follow-up Days=	Basic Anes@
	(64814 Hypogastric or presacral neurectomy has been deleted. To report, use 64999)			
64818	Sympathectomy, lumbar; unilateral	15.0	60	5.0
64819	bilateral	21.0	60	5.0
	(64824 has been deleted. To report periarterial sympathectomy, use 64999)			
	NERVE REPAIR BY SUTURE (NEURORRHAPHY)			
64830	Microdissection and/or microrepair of nerve (list separately in addition to code for nerve repair)	BR		3.0
64831	Suture of digital nerve, hand or foot; one nerve	4.8	90	3.0
64832	each additional digit nerve	1.2		
64834	Suture of one nerve, hand or foot; common sensory nerve	8.0	90	3.0
64835	median motor thenar	10.0	90	3.0
64836	ulnar motor	12.0	90	3.0
64837	Suture of each additional nerve, hand or foot	BR		3.0
64840	Suture of posterior tibial nerve	BR		3.0
64856	Suture of major peripheral nerve, arm or leg, except sciatic; including transposition	14.0	90	3.0
64857	without transposition	BR	90	3.0
64858	Suture of sciatic nerve	BR		3.0
64859	Suture of each additional major peripheral nerve	BR		3.0
64861	Suture of; brachial plexus	BR		3.0
64862	lumbar plexus	BR		3.0
64864	Suture of facial nerve; extracranial	BR		3.0
64865	intratemporal, with or without grafting	BR		3.0
64866	Anastomosis; facial–spinal accessory	26.0	90	3.0
64868	facial–hypoglossal	26.0	90	3.0
64870	facial–phrenic	26.0	90	3.0
64872	Suture of nerve; requiring secondary or delayed suture (list separately in addition to code for primary neurorrhaphy)	BR		3.0
64874	requiring extensive proximal mobilization, or transposition of nerve (list separately in addition to code for nerve suture)	BR		3.0
64876	requiring shortening of bone of extremity (list separately in addition to code for nerve suture)	BR		3.0
	NEURORRHAPHY WITH NERVE GRAFT			
64890	Nerve graft (includes obtaining graft), single strand, hand or foot; up to 4 cm length	BR	90	3.0
64891	more than 4 cm length	BR	90	3.0
64892	Nerve graft (includes obtaining graft), single strand, arm or leg; up to 4 cm length	BR	90	3.0
64893	more than 4 cm length	BR	90	3.0
64895	Nerve graft (includes obtaining graft), multiple strands (cable), hand or foot; up to 4 cm length	BR	90	3.0
64896	more than 4 cm length	BR	90	3.0
64897	Nerve graft (includes obtaining graft), multiple strands (cable), arm or leg; up to 4 cm length	BR	90	3.0
64898	more than 4 cm length	BR	90	3.0
64901	Nerve graft, each additional nerve; single strand	BR	90	3.0
64902	multiple strands (cable)	BR	90	3.0
64905	Nerve pedicle transfer; first stage	BR	90	3.0
64907	second stage	BR	90	3.0
	OTHER PROCEDURES			
64999	Unlisted procedure, nervous system	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-375, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-375, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-375, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-375, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-375, filed 1/30/74; Order 68-7, § 296-22-375, filed 11/27/68, effective 1/1/69.]

EYE AND OCULAR ADNEXA

(For diagnostic and treatment ophthalmological services, see medicine, ophthalmology, page 18, and 92002 et seq)

WAC 296-22-405 Eyeball.

		Unit Value	Follow-up Days=	Basic Anes@
	(For goniotomy, see 65820)			
	REMOVAL OF EYE			
65091	Evisceration ocular contents; without implant	10.0	30	3.0
65093	with implant	12.0	30	3.0
65101	Enucleation of eye, without implant	10.0	30	3.0
65103	with implant, muscles not attached to implant	11.0	30	3.0
65105	with, muscles attached to implant, muscles attached to implant	12.0	30	3.0
	(For conjunctivoplasty after enucleation, see 68320 et seq)			
65110	Exenteration orbit (does not include skin graft), removal orbital contents; only	20.0	60	4.0
65112	with therapeutic removal of bone	BR		4.0
65114	with temporalis muscle transplant	25.0	60	4.0
	(For skin graft to orbit (split skin), see 15120, 15121; free, full thickness, see 15260, 15261)			
	(For eyelid repair involving more than skin, see 67930 et seq)			
	SECONDARY IMPLANT PROCEDURES			
	An ocular implant is an implant inside muscular cone; an orbital implant is an implant outside muscular cone.			
65130	Insertion ocular implant secondary; after evisceration, in scleral shell	8.0	30	4.0
65135	after enucleation, muscles not attached to implant	10.0	30	4.0
65140	after enucleation, muscles attached to implant	14.0	30	4.0
65150	Reinsertion ocular implant; with or without conjunctival graft	BR		4.0

		Unit Value	Follow-up Days=	Basic Anes@
65155	with use of foreign material for reinforcement and/or attachment of muscles to implant	BR		4.0
65175	Removal ocular implant	BR		4.0
	(For orbital implant (implant outside muscle cone) insertion, see 67550; removal, see 67560)			
	REMOVAL OF OCULAR FOREIGN BODY			
	(For removal of implanted material: Ocular implant, see 65175; anterior segment implant, see 65920; posterior segment implant, see 67120; orbital implant, see 67560)			
	(For diagnostic x-ray for foreign body, see 70030–70050)			
	(For diagnostic echography for foreign body, see 76529)			
	(For removal of foreign body from orbit: frontal approach, see 67413; lateral approach, see 67430; transcranial approach, see 61334)			
	(For removal of foreign body from eyelid, embedded, see 67938)			
	(For removal of foreign body from lacrimal system, see 68530)			
65205*	Removal foreign body, external eye; conjunctival superficial	0.2	0	4.0
65210*	conjunctival embedded (includes concretions), subconjunctival, or scleral nonperforating	0.6	0	4.0
65220*	corneal, without slit lamp	0.6	0	4.0
65222*	corneal, with slit lamp	0.8	0	4.0
	(For repair of corneal laceration with foreign body, see 65275)			
65230	Removal foreign body intraocular; from anterior chamber, magnetic extraction	12.0	45	6.0
65235	from anterior chamber, nonmagnetic extraction	16.0	45	8.0
65240	from lens (without extraction lens), magnetic extraction	12.0	30	6.0
65245	from lens (without extraction lens), nonmagnetic extraction	BR		8.0
	(For removal implanted material anterior segment, see 65920)			
65260	from posterior segment, magnetic extraction, anterior or posterior route	12.0	30	6.0
65265	from posterior segment, nonmagnetic extraction	18.0	30	8.0
	(For removal implanted material posterior segment, see 67120)			
	REPAIR OF LACERATION OF EYEBALL			
	(For fracture of orbit, see 21380 et seq)			
	(For repair wound of eyelid, skin, linear, simple, see 12011–12018; intermediate, layered closure, see 12051–12057; linear, complex, see 13150–13300; other, see 67930–67935)			
	(For repair wound of lacrimal system, see 68700)			
	(For repair operative wound, see 66250)			
65270*	Repair laceration; conjunctiva, with or without nonperforating laceration sclera, direct closure	0.9	0	4.0
65272	conjunctiva, by mobilization and rearrangement, without hospitalization	BR		4.0
65273	conjunctiva, by mobilization and rearrangement, with hospitalization	BR		4.0
65275	cornea, nonperforating, with or without removal foreign body	SV		4.0
65280	cornea and/or sclera, perforating, not involving uveal tissue	BR	30	5.0
65285	cornea and/or sclera, perforating, with reposition or resection of uveal tissue	15.4	30	5.0
	(Repair of laceration includes use of conjunctival flap and restoration of anterior chamber, by air or saline injection when indicated)			
	(For repair of iris or ciliary body, see 66680)			
65290	Repair wound extraocular muscle, tendon and/or Tenon's capsule	4.4	30	4.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-405, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-405, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-405, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-405, filed 1/30/74; Order 68-7, § 296-22-405, filed 11/27/68, effective 1/1/69.]

WAC 296-22-410 Anterior segment--Cornea.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
65300	Delimiting keratotomy	2.0	15	3.0
	(For paracentesis of cornea, see 65800–65815)			
	(For removal of foreign body, cornea, see 65220–65222)			
	EXCISION			
65400	Excision lesion cornea (keratectomy, lamellar, partial), except pterygium	8.0	30	3.0
65410*	Biopsy cornea	1.0	0	3.0
65420	Excision or transposition, pterygium; without graft	6.0	30	3.0
65426	with graft	BR		3.0
	REMOVAL OR DESTRUCTION			
65430*	Scraping cornea, diagnostic, for smear and/or culture	0.4	0	4.0

		Unit Value	Follow-up Days=	Basic Anes@
65435*	Removal corneal epithelium; with or without chemocauterization (abrasion, curettage)	1.0	0	4.0
65436	with application of chelating agent, e.g., EDTA	BR		
65445	Thermocauterization lesion of cornea	1.6	7	4.0
65455	Cryotherapy lesion of cornea	1.6	7	4.0
65600	Tattoo of cornea, mechanical or chemical	8.0	30	3.0
	KERATOPLASTY			
	(Corneal transplant includes preparation of donor material)			
65710	Keratoplasty (corneal transplant) lamellar; autograft	24.0	90	8.0
65720	homograft, fresh	24.0	90	8.0
65725	homograft, preserved	24.0	90	8.0
65730	Keratoplasty (corneal transplant) penetrating (except in aphakia); autograft	30.0	90	8.0
65740	homograft, fresh	30.0	90	8.0
65745	homograft, preserved	30.0	90	8.0
65750	Keratoplasty (corneal transplant) penetrating, in aphakia	30.0	90	8.0
	OTHER PROCEDURES			
65760	Keratomeleusis (refractive keratoplasty)	30.0	90	8.0
65765	Keratophakia	30.0	90	8.0
65770	Keratoprosthesis	32.0	90	8.0
	(For fitting of contact lens for treatment of disease, see 92070)			
	(For unlisted procedures on cornea, see 66999)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-410, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-410, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-410, filed 1/30/74; Order 68-7, § 296-22-410, filed 11/27/68, effective 1/1/69.]

WAC 296-22-413 Anterior segment--Anterior chamber.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*65800	Paracentesis anterior chamber eye (separate procedure); with diagnostic aspiration of aqueous	*1.0	0	3.0
65805*	with therapeutic release of aqueous	1.5	0	3.0
65810	with removal of vitreous and/or discission of anterior hyaloid membrane, with or without air injection	8.0	90	3.0
65815	with removal of blood, with or without irrigation and/or air injection	5.6	15	3.0
	(For injection, see 66020-66030)			
	(For removal of blood clot, see 65930)			
65820	Goniotomy; without goniopuncture	10.0	30	3.0
65825	with goniopuncture	10.0	30	4.0
65830	Goniopuncture, without goniotomy	BR		3.0
65850	Trabeculotomy ab externo	BR		3.0
65855	Trabeculoplasty by laser surgery, one or more sessions (defined treatment series)	BR		3.0
	(If retreatment necessary after several months because of disease progression, a new treatment or treatment series should be reported with a modifier, if necessary, to indicate lessor or greater complexity)			
	(For trabeculectomy, see 66170)			
	OTHER PROCEDURES			
65865	Severing adhesions anterior segment of eye, incisional technique (with or without injection air or liquid) (separate procedure); goniosynechiae	10.0	30	6.0
65870	anterior synechiae, except goniosynechiae	9.0	30	6.0
65875	posterior synechiae	9.0	30	6.0
65880	corneovitreal adhesions	BR		3.0
65900	Removal epithelial downgrowth anterior chamber eye	BR		6.0
65920	Removal implanted material anterior segment eye	BR		6.0
65930	Removal of blood clot, anterior segment eye	BR		6.0
66020	Injection, anterior chamber (separate procedure); air or liquid	2.0	7	3.0
66030*	medication	1.1	7	3.0
	(For unlisted procedures on anterior segment, see 66999)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-413, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-413, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-413, filed 1/30/74. Formerly WAC 296-22-405 (part) and 296-22-415.]

WAC 296-22-415 Anterior segment--Anterior sclera.

		Unit Value	Follow-up Days=	Basic Anes@
	EXCISION			
	(For removal of intraocular foreign body, see 65230-65235)			
	(For operations on posterior sclera, see 67250-67255)			
66130	Excision lesion sclera	BR		6.0
66150	Fistulization sclera for glaucoma; trephination with iridectomy	12.0	45	6.0
66155	thermocauterization with iridectomy	12.0	45	6.0
66160	sclerectomy with punch or scissors, with iridectomy	12.0	45	6.0
66165	iridencleisis or iridotasis	12.0	45	6.0
66170	trabeculectomy ab externo	BR		
	(For trabeculotomy ab externo, see 65850)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For repair of operative wound, see 66250)			
REPAIR				
	(For scleral procedures in retinal surgery, see 67102 et seq)			
66220	Repair scleral staphyloma; without graft	20.0	90	6.0
66225	with graft	24.0	90	6.0
	(For scleral reinforcement, see 67250–67255)			
REVISION OPERATIVE WOUND				
66250	Revision or repair operative wound anterior segment, any type, early or late, major or minor procedure	BR		6.0
OTHER PROCEDURES				
	(For unlisted procedures on anterior sclera, see 66999)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-415, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-415, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-415, filed 1/30/74; Order 68-7, § 296-22-415, filed 11/27/68, effective 1/1/69.]

WAC 296-22-420 Anterior segment--Iris, ciliary body.

		Unit Value	Follow-up Days=	Basic Anes@
IRIDOTOMY, IRIDECTOMY				
66500	Iridotomy by stab incision (separate procedure); except transfixion	5.0	30	3.0
66505	with transfixion as for iris bombe	5.0	30	3.0
66600	Iridectomy, with corneoscleral or corneal section; for removal of lesion	14.0	45	3.0
66605	with cyclectomy	20.0	45	3.0
66625	peripheral for glaucoma (separate procedure)	10.0	45	3.0
66630	sector for glaucoma (separate procedure)	10.0	45	3.0
66635	"optical" (separate procedure)	10.0	45	3.0
	(For "iridotomy" by photocoagulation, see 66761)			
	(For "coreoplasty" by photocoagulation, see 66762)			
REPAIR				
66680	Repair of iris, ciliary body (as for iridodialysis)	10.0	45	3.0
	(For reposition or resection of uveal tissue with perforating wound of cornea or sclera, see 65285)			
66682	Suture of iris, ciliary body (separate procedure) with retrieval of suture through small incision (e.g., McCannel suture)	BR	45	3.0
DESTRUCTION				
66700	Cyclodiathermy; initial	8.0	30	3.0
66701	subsequent	4.0	30	3.0
66720	Cyclocryotherapy; initial	6.0	30	3.0
66721	subsequent	3.0	30	3.0
66740	Cyclodialysis; initial	12.0	45	3.0
66741	subsequent	6.0	45	3.0
66761	Coreoplasty ("irodotomy") by photocoagulation; for glaucoma	5.0	30	3.0
66762	other than for glaucoma	5.0	30	3.0
66770	Destruction of cyst or lesion iris or ciliary body (nonexcisional procedure)	9.0	45	3.0
	(For excision lesion iris, ciliary body, see 66600, 66605; for removal epithelial downgrowth, see 65900)			
OTHER PROCEDURES				
	(For unlisted procedures on iris, ciliary body, see 66999)			

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-420, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-420, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-420, filed 1/30/74; Order 68-7, § 296-22-420, filed 11/27/68, effective 1/1/69.]

WAC 296-22-425 Anterior segment--Lens.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
66800	Discission lens (needling of lens); initial	5.0	45	3.0
66801	subsequent	2.4	45	3.0
66820	Discission of secondary membranous cataract ("after cataract") and/or anterior hyaloid (Ziegler or Wheeler knife technique)	5.0	45	3.0
REMOVAL CATARACT				
66830	Removal of secondary membranous cataract ("after cataract"), with corneoscleral section, with or without iridectomy (iridocapsulotomy, iridocapsulectomy)	12.0	90	3.0
66840	Removal of lens material; aspiration technique, one or more stages	12.0	30	3.0
66850	phacofragmentation technique (mechanical or ultrasonic, e.g., phacoemulsification), with aspiration	16.0	90	3.0
66915	Expression lens, linear, one or more stages	20.0	90	3.0
66920	Extraction lens with or without iridectomy; intracapsular, with or without enzymes	20.0	90	3.0
66930	intracapsular, for dislocated lens	22.0	90	3.0
66940	extracapsular (other than 66840, 66850, 66915)	20.0	90	3.0
66945	in presence of fistulization bleb and/or by temporal, inferior or inferotemporal route, intracapsular or extracapsular	22.0	90	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	Preliminary iridectomy, done as a separate procedure prior to extraction of lens, is included in the listed extraction of lens			
	(For removal of intralenticular foreign body without lens extraction, see 65240–65245)			
	(For repair of operative wound, see 66250)			
	ANTERIOR SEGMENT—OTHER PROCEDURES			
	(66980 Cataract extraction with lens implantation has been deleted. To report, see 66983, 66984)			
66983	Intracapsular cataract extraction with insertion of intraocular lens prosthesis (one stage procedure)	BR		3.0
66984	Extracapsular cataract removal with insertion of intraocular lens prothesis (one stage procedure)	BR		3.0
66985	insertion of intraocular lens subsequent to cataract extraction (separate procedure)	BR		3.0
	(For removal of implanted material from anterior segment, see 65920)			
	(For intraocular lens prosthesis supplied by physician, see 99070)			
	(For ultrasonic determination of intraocular lens power, see 76516, 76517)			
	(For secondary fixation (separate procedure), see 66682)			
66999	Unlisted procedure, anterior segment of eye	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-425, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-425, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-425, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-425, filed 1/30/74; Order 68-7, § 296-22-425, filed 11/27/68, effective 1/1/69.]

WAC 296-22-427 Posterior segment--Vitreous.

		Unit Value	Follow-up Days=	Basic Anes@
67005	Removal of vitreous, anterior approach (open sky technique or limbal incision); partial removal	BR		3.0
67010	subtotal removal with mechanical vitrectomy (such as VISC or rotoextractor)	BR		3.0
	(For removal of vitreous by paracentesis of anterior chamber, see 65810)			
	(For removal of corneovitreal adhesions, see 65880)			
67015	Aspiration or release of vitreous, subretinal or choroidal fluid, pars plana approach (posterior sclerotomy)	9.0	15	3.0
67025	Injection of vitreous substitute, pars plana approach (separate procedure), excludes air or balanced salt solutions	12.0	30	3.0
67030	Discission of vitreous strands (without removal), pars plana approach	BR		3.0
	(67035 has been deleted. To report use 67036)			
67036	Vitrectomy, mechanical, pars plana approach	BR		3.0
	(For associated lensectomy, see 66850)			
	(For use of vitrectomy in retinal detachment surgery, see 67108)			
	(For associated removal of foreign body, see 65260–65265)			
	(For unlisted procedures on vitreous, see 67299)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-427, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-427, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-427, filed 1/30/74. Formerly WAC 296-22-425.]

WAC 296-22-430 Posterior segment--Retinal detachment.

		Unit Value	Follow-up Days=	Basic Anes@
	REPAIR			
	(If diathermy, cryotherapy and/or photocoagulation are combined, report under principle modality used)			
67102	Repair retinal detachment (one or more stages, same hospitalization); diathermy, with or without drainage of subretinal fluid and/or injection of air or saline	20.0	90	3.0
67103	cryotherapy, with or without drainage of subretinal fluid	BR		3.0
67104	drainage of subretinal fluid with photocoagulation (one or more stages), xenon arc	22.0	90	3.0
67106	drainage of subretinal fluid with photocoagulation (one or more stages), laser	22.0	90	3.0
67107	scleral buckling (such as lamellar excision, imbrication, or encircling procedure), with or without implant, may include procedures 67102–67106	30.0	90	8.0
67108	with vitrectomy, any method, with or without air tamponade, may include procedures 67102–67107 and/or removal of lens by same technique	30.0	120	5.0
67109	by technique other than 67102–67108	BR		3.0
67112	previously operated upon, any technique	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For aspiration or drainage of subretinal or subchoroidal fluid, see 67015)			
67115	Release of encircling material (posterior segment)	BR		3.0
67120	Removal implanted material, posterior segment extraocular	BR		3.0
67121	intraocular	BR		3.0
	(For removal from anterior segment, use 65920)			
	(For removal of foreign body, see 65260, 65265)			
	PROPHYLAXIS			
	Repetitive services. The services listed below are often performed in multiple sessions or groups of sessions. The methods of reporting vary. The following descriptors are intended to include all sessions in a defined treatment period.			
67142	Prophylaxis retinal detachment (e.g., retinal break, lattice degeneration), without drainage, one or more stages; diathermy	10.0	30	3.0
67143	cryotherapy	10.0	30	3.0
67144	photocoagulation, xenon arc	10.0	30	3.0
67146	photocoagulation, laser	10.0	30	3.0
	POSTERIOR SEGMENT—OTHER PROCEDURES			
	DESTRUCTION—RETINA, CHOROID			
67212	Destruction of localized lesion retina or choroid (e.g. choroidopathy), one or more stages; diathermy	10.0	30	3.0
67213	cryotherapy	10.0	30	3.0
67214	photocoagulation, xenon arc	10.0	30	3.0
67216	photocoagulation, laser	10.0	30	3.0
67218	radiation by implantation of source (includes removal of source)	BR		3.0
67222	Destruction of progressive retinopathy (eg, diabetic), one or more stages; diathermy	12.0	30	3.0
67223	cryotherapy	12.0	30	3.0
67224	photocoagulation, xenon arc	12.0	30	3.0
67226	photocoagulation, laser	12.0	30	3.0
	(For unlisted procedures on retina, see 67299)			
	SCLERAL REPAIR			
	(For excision lesion sclera, see 66130)			
67250	Scleral reinforcement (separate procedure); without graft	22.0	90	3.0
67255	with graft	24.0	90	3.0
	(For repair scleral staphyloma, see 66220–66225)			
67299	Unlisted procedure, posterior segment	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-430, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-430, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-430, filed 1/30/74; Order 68-7, § 296-22-430, filed 11/27/68, effective 1/1/69.]

WAC 296-22-435 Ocular adnexa--Extraocular muscles.

		Unit Value	Follow-up Days=	Basic Anes@
67311	Strabismus surgery on patient not previously operated on, any procedure, any muscle, (may include minor displacement, eg, for A or V pattern); one muscle	10.0	30	3.0
67312	two muscles, one or both eyes	10.0	30	3.0
67313	three or more muscles, and/or adjustable suture one or both eyes	12.0	30	3.0
67320	Transposition extraocular muscle (e.g., for paretic muscle), one or more stages, one or more muscles, with displacement of plane of action more than 5 mm	18.0	30	3.0
67331	Strabismus surgery on patient previously operated on; not involving reoperation of muscles	10.0	30	3.0
67332	involving reoperation of muscles	BR		3.0
	OTHER PROCEDURES			
67350	Biopsy extraocular muscle	4.4	15	3.0
	(For repair of wound extraocular muscle, tendon or Tenon's capsule, see 65290)			
67399	Unlisted procedure, ocular muscle	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-435, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-435, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-435, filed 1/30/74; Order 68-7, § 296-22-435, filed 11/27/68, effective 1/1/69.]

WAC 296-22-440 Ocular adnexa--Orbit.

		Unit Value	Follow-up Days=	Basic Anes@
	EXPLORATION, EXCISION			
67400	Orbitotomy without bone flap (frontal approach); for exploration, with or without biopsy	12.0	30	7.0
67405	drainage only	12.0	30	7.0
67412	with removal lesion	BR		7.0
67413	with removal foreign body	BR		7.0
67415	Transconjunctival or aspirational biopsy	2.2	15	3.0
	(For exenteration, enucleation, and repair, see 65101 et seq)			
67420	Orbitotomy with bone flap, lateral approach (e.g., Kroenlein); with removal of lesion	22.0	30	7.0
67430	with removal foreign body	22.0	30	7.0
67440	with drainage or decompression	22.0	30	7.0
67450	for exploration, with or without biopsy	22.0	30	7.0
	(For orbitotomy, transcranial approach, see 61330–61334)			
	(For orbital implant, see 67550, 67560)			

		Unit Value	Follow-up Days=	Basic Anes@
	(For removal of eyeball or for repair after removal, see 65091–65175)			
OTHER PROCEDURES				
*67500	Retrobulbar injection; medication (separate procedure, does not include supply of medication)	*0.6	0	
67505	alcohol	2.0	15	
67510	air or opaque contrast medium for radiography	1.0	7	
67515*	Injection therapeutic agent into Tenon's capsule	0.7	0	3.0
	(For subconjunctival injection, see 68200)			
67550	Orbital implant (implant outside muscle cone); insertion	15.0	30	3.0
67560	removal or revision	BR		3.0
	(For ocular implant (implant inside muscle cone), see 65093–65105, 65130–65175)			
	(For treatment of fractures of malar area, orbit, see 21350 et seq)			
67599	Unlisted procedure, orbit	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-440, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-440, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-440, filed 1/30/74; Order 68-7, § 296-22-440, filed 11/27/68, effective 1/1/69.]

WAC 296-22-445 Ocular adnexa--Eyelids.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION				
*67700	Blepharotomy, drainage abscess eyelid	*0.4	0	3.0
67710	Severing tarsorrhaphy	0.4	0	3.0
67715	Canthotomy (separate procedure)	0.4	0	3.0
	(For canthoplasty, see 67950)			
	(For division symblepharon, see 68340)			
EXCISION OR REMOVAL OF LESION INVOLVING MORE THAN SKIN (I.E., INVOLVING LID MARGIN, TARSUS AND/OR PALPEBRAL CONJUNCTIVA")				
	(For removal of lesion, involving mainly skin of eyelid, see 11440–11446; 11640–11646; 17000–17010)			
	(For repair wounds, blepharoplasty, grafts, reconstructive surgery, see 67930–67975)			
67800	Excisionchalazion; single	1.2	15	3.0
67801	multiple, same lid	1.4	15	3.0
67805	multiple, different lids	1.6	15	3.0
67808	under general anesthesia and/or requiring hospitalization, single or multiple	3.2	30	3.0
67810*	Biopsy eyelid	1.0	37	3.0
*67820	Correction trichiasis; epilation, forceps only	*0.4	0	
*67825	epilation, (e.g., by electrosurgery or cryotherapy)	*1.0	0	3.0
67830	incision lid margin	BR		3.0
67835	incision lid margin, with free mucous membrane graft	BR		3.0
67840*	Excision of lesion of eyelid (except chalazion) without closure or with simple direct closure	1.6	0	3.0
	(For excision and repair of eyelid by reconstructive surgery, see 67961–67966)			
67850*	Destruction of lesion of lid margin (up to 1 cm)	1.6	0	3.0
	(For chemosurgery technique of malignancies of skin, see 17300–17302)			
	(For initiation or follow-up care of topical chemotherapy, e.g., 5-FU or similar agents, see appropriate office visits)			
TARSORRHAPHY				
67880	Construction intermarginal adhesions, median tarsorrhaphy, or canthorrhaphy;	2.0	30	3.0
67882	with transposition of tarsal plate	14.0	60	3.0
	(For severing of tarsorrhaphy, see 67710)			
	(For canthoplasty, reconstruction canthus, see 67950)			
	(For canthotomy, see 67715)			
REPAIR BLEPHAROPTOSIS, LID RETRACTION				
67901	Repair blepharoptosis; frontalis muscle technique with suture	12.0	60	3.0
67902	frontalis muscle technique with fascial sling (includes obtaining fascia)	16.0	60	3.0
67903	(tarso) levator resection, internal approach	16.0	60	3.0
67904	(tarso) levator resection, external approach	16.0	60	3.0
67906	superior rectus technique with fascial sling (includes obtaining fascia)	16.0	60	3.0
67907	superior rectus tendon transplant	16.0	60	3.0
67908	conjunctivo-tarso-levator resection (Fasanella-Servat type)	12.0	60	3.0
67909	Reduction of overcorrection of ptosis	BR		3.0
67911	Correction of lid retraction	12.0	60	3.0
REPAIR ECTROPION, ENTROPION				
	(For correction trichiasis by mucous membrane graft, see 67835)			
67914	Repair ectropion; suture	1.6	15	3.0
67915	thermocauterization	1.4	15	3.0
67916	blepharoplasty, excision tarsal wedge	9.0	60	3.0
67917	blepharoplasty, extensive (e.g., Kuhnt-Szymanowski operation)	11.0	60	3.0

		Unit Value	Follow-up Days=	Basic Anes@
	(For correction everted punctum, see 68705)			
67921	Repair entropion; suture	1.6	15	3.0
67922	thermocauterization	1.4	15	3.0
67923	blepharoplasty, excision tarsal wedge	9.0	60	3.0
67924	blepharoplasty, extensive (e.g., Wheeler operation)	11.0	60	3.0
	(For repair cicatricial ectropion or entropion requiring scar excision or skin graft, see also 67961 et seq.)			
	RECONSTRUCTIVE SURGERY, BLEPHAROPLASTY INVOLVING MORE THAN SKIN (I.E., INVOLVING LID MARGIN, TARSUS, AND/OR PALPEBRAL CONJUNCTIVA)			
67930	Suture recent wound, eyelid, involving lid margin, tarsus, and/or palpebral conjunctiva) direct closure; partial thickness	1.6	15	3.0
67935	full thickness	3.4	30	3.0
67938	Removal embedded foreign body, eyelid	BR		3.0
	(For repair skin of eyelid, see 12011–12018; 12051–12057; 13150–13300)			
	(For repair lacrimal canaliculi, see 68700)			
	(For tarsorrhaphy, canthorrhaphy, see 67880–67882)			
	(For repair blepharoptosis and lid retraction, see 67901–67911)			
	(For blepharoplasty for entropion, ectropion, see 67916, 67917, 67923, 67924)			
	(For correction blepharochalasis (blepharorhytidectomy), see 15820–15823)			
	(For repair skin of eyelid, adjacent tissue transfer, see 14060, 14061; preparation for graft, see 15000; free graft, see 15120, 15121, 15260, 15261)			
	(For excision lesion of eyelid, see 67800 et seq.)			
	(For repair lacrimal canaliculi, see 68700)			
67950	Canthoplasty (reconstruction of canthus)	BR		3.0
67961	Excision and repair eyelid, involving lid margin, tarsus, conjunctiva, or full thickness, may include preparation for skin graft or pedicle flap with adjacent tissue transfer or rearrangement; up to one-fourth of lid margin	12.0	60	3.0
67966	over one-fourth of lid margin	15.0	60	3.0
	(For canthoplasty, see 67950)			
	(For free skin grafts, see 15120, 15121, 15260, 15261)			
	(For tubed pedicle flap preparation, see 15515; for delay, see 15630; for attachment, see 15555)			
67971	Reconstruction eyelid full thickness by transfer of tarsoconjunctival flap from opposing eyelid; up to two-thirds of eyelid, one stage or first stage	15.0	60	3.0
67973	total eyelid, lower, one stage or first stage	17.0	60	3.0
67974	total eyelid, upper, one stage or first stage	20.0	60	3.0
67975	second stage	2.4	60	3.0
	OTHER PROCEDURES			
67999	Unlisted procedure, eyelids	BR		3.0
	(For cicatricial ectropion or entropion requiring scar excision, skin graft, etc., see 15100–15260)			

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-445, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-445, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-445, filed 1/30/74; Order 68-7, § 296-22-445, filed 11/27/68, effective 1/1/69.]

WAC 296-22-450 Ocular adnexa--Conjunctiva.

		Unit Value	Follow-up Days=	Basic Anes@
	(For removal of foreign body, see 65205 et seq.)			
	INCISION, DRAINAGE			
68020	Incision conjunctiva, drainage cyst	0.4	15	3.0
68040	Expression conjunctival follicles, e.g., for trachoma	SV		
	EXCISION, DESTRUCTION			
68100	Biopsy conjunctiva	1.0	15	3.0
68110	Excision lesion conjunctiva; up to 1 cm	1.0	15	3.0
68115	over 1 cm	2.0	15	3.0
68130	with adjacent sclera	BR		3.0
68135*	Destruction lesion conjunctiva	0.60	0	3.0
	(For nevus, see 11440–11460)			
	INJECTION			
68200	Subconjunctival injection	0.6	7	
	(For injection into Tenon's capsule or retrobulbar injection, see 67500–67515)			
	CONJUNCTIVOPLASTY			
	(For wound repair, see 65270–65273)			
68320	Conjunctivoplasty; with conjunctival graft or extensive rearrangement	12.0	30	3.0
68325	with buccal mucous membrane graft (includes obtaining graft)	14.0	30	5.0
68326	Conjunctivoplasty, reconstruction cul-de-sac; with conjunctival graft or extensive rearrangement	BR		3.0
68328	with buccal mucous membrane graft (includes obtaining			

		Unit Value	Follow-up Days=	Basic Anes@
	graft)	BR		5.0
68330	Repair symblepharon; conjunctivoplasty, without graft	BR		3.0
68335	with free graft conjunctiva or buccal mucous membrane (includes obtaining graft)	BR		5.0
68340	division symblepharon with or without insertion of conformer or contact lens	BR		3.0
	OTHER PROCEDURES			
68360	Conjunctival flap; bridge or partial (separate procedure)	5.0	30	3.0
68362	total (such as Gunderson thin flap or purse string flap)	9.0	30	3.0
	(For conjunctival flap for perforating injury, see 65280–65285)			
	(For repair of operative wound, see 66250)			
	(For removal of conjunctival foreign body, see 65205–65210)			
68399	Unlisted procedure, conjunctiva. (For repair of symblepharon without graft, see 11400–11460, 13000–14160)	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-450, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-450, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-450, filed 1/30/74; Order 68-7, § 296-22-450, filed 11/27/68, effective 1/1/69.]

WAC 296-22-455 Ocular adnexa--Lacrimal system.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
68400	Incision, drainage lacrimal gland	2.4	15	3.0
68420	Incision, drainage lacrimal sac	2.0	15	3.0
*68440	Snip incision lacrimal punctum	*0.4	0	3.0
	EXCISION			
68500	Excision of lacrimal gland: (dacryoadenectomy), except for tumor; total	12.0	45	3.0
68505	partial	12.0	45	3.0
68510	Biopsy lacrimal gland	BR		3.0
68520	Excision of lacrimal sac (dacryocystectomy)	12.0	45	3.0
68525	Biopsy of lacrimal sac	BR		3.0
68530	Removal or foreign body or dacryolith, lacrimal passages	SV		
68540	Excision of lacrimal gland tumor; frontal approach	15.0	45	3.0
68550	involving osteotomy	BR		3.0
	REPAIR			
68700	Plastic repair canaliculi	BR		3.0
68705	Correction everted punctum, cautery	1.0	60	3.0
68720	Dacryocystorhinostomy (fistulization of lacrimal sac to nasal cavity)	14.0	60	5.0
68745	Conjunctivorhmostomy (fistulization of conjunctiva to nasal cavity); without tube	15.0	90	5.0
68750	with insertion of tube or stent.	15.0	90	5.0
68760	Closure lacrimal punctum, thermocauterization	1.0	15	3.0
68770	Closure lacrimal fistula (separate procedure)	5.0	30	3.0
	PROBING AND RELATED PROCEDURES			
*68800	Dilation lacrimal punctum, with or without irrigation, unilateral or bilateral	*0.4	0	3.0
*68820	Probing nasolacrimal duct, with or without irrigation, unilateral or bilateral;	*0.6	0	3.0
68825	requiring hospitalization	BR		3.0
	(See also 92018)			
68830	with insertion of tube or stent (without general anesthesia)	2.8	15	3.0
*68840	Probing lacrimal canaliculi, with or without irrigation	*0.4	0	3.0
68850*	Injection contrast medium for dacryocystography	0.7	0	3.0
	(For dacryocystography, see 70170, 70171)			
	OTHER PROCEDURES			
68899	Unlisted procedure, lacrimal system	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-455, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-455, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-455, filed 1/30/74; Order 68-7, § 296-22-455, filed 11/27/68, effective 1/1/69.]

AUDITORY SYSTEM

(For diagnostic services, e.g., audiometry, vestibular tests, see 92502 et seq.)

WAC 296-22-465 External ear.

		Unit Value	Follow-up Days=	Basic Anes@
	INCISION			
*69000	Drainage external ear, abscess or hematoma; simple	*0.4	0	3.0
69005	complicated	BR		3.0
*69020	Drainage external auditory canal, abscess	*0.4	0	3.0
69090	Ear piercing	0.6	7	
	EXCISION			
	(For plastic closure, see 13000–15760)			
69100	Biopsy external ear	0.6	7	3.0
69105	Biopsy external auditory canal	0.6	7	3.0
69110	Excision external ear; partial, simple repair	3.0	30	3.0
69120	complete amputation	8.0	90	3.0
	(For reconstruction of ear, see 15120 et seq.)			

		Unit Value	Follow-up Days=	Basic Anes@
69140	Excision exostosis(es), of external auditory canal	12.0	90	3.0
69145	Excision soft tissue lesion, external auditory canal	0.6	90	3.0
69150	Radical excision external auditory canal lesion; without neck dissection	BR		3.0
69155	with neck dissection	BR		6.0
	(For resection of temporal bone, see 69535)			
	(For skin grafting, see 15000–15261)			
	REMOVAL FOREIGN BODY			
*69200	Removal foreign body from external auditory canal; without general anesthesia	*0.4	0	
69205	with general anesthesia	2.0	7	3.0
69210	Removal impacted cerumen (separate procedure), one or both ears	0.5	0	3.0
69220	Debridement, mastoidectomy cavity, simple (e.g., routine cleaning; unilateral	BR		3.0
69221	bilateral	BR		3.0
69222	Debridement, mastoidectomy cavity, complex (e.g., with anesthesia or more than routine cleaning); unilateral	BR		3.0
69223	bilateral	BR		3.0
	REPAIR			
	(For suture of wound or injury of external ear, see 12011–14300)			
69300	Otoplasty protruding ear, with or without size reduction; unilateral	10.0	180	3.0
69301	bilateral	16.0	180	3.0
69310	Reconstruction of external auditory canal (meatoplasty) (eg, for stenosis due to trauma, infection), separate procedure	BR		3.0
69320	Reconstruction external auditory canal for congenital atresia, single stage	16.0	180	3.0
	(For combination with middle ear reconstruction see 69631, 69641)			
	(For other reconstructive procedures with grafts (skin, cartilage, bone), see 13150–15760, 21230–21235)			
	OTHER PROCEDURES			
	(For otoscopy under general anesthesia, see 92502)			
69399	Unlisted procedure, external ear.	BR		3.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-465, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-465, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-465, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-465, filed 1/30/74; Order 68-7, § 296-22-465, filed 11/27/68, effective 1/1/69.]

WAC 296-22-470 Middle ear.

		Unit Value	Follow-up Days=	Basic Anes@
	INTRODUCTION			
69400	Eustachian tube inflation, transnasal; with catheterization	0.3	0	
69401	without catheterization	0.3	0	
69405	Eustachian tube catheterization, transtympanic	BR		
69410	Focal application of phase control substance, middle ear (baffle technique)	BR		
	INCISION			
*69420	Myringotomy, including aspiration and/or eustachian tube inflation	*0.6	0	3.0
*69424	Ventilating tube removal when originally inserted by another physician; unilateral	BR		3.0
69425	bilateral	BR		3.0
*69433	Tympanostomy (requiring insertion of ventilating tube); local or topical anesthesia; unilateral	1.6	7	3.0
*69434	bilateral	1.8	0	3.0
	(69433, 69434 would normally be completed in an office setting)			
69436	Tympanostomy (requiring insertion of ventilating tube), general anesthesia; unilateral	2.0		3.0
69437	bilateral	3.0		3.0
	(69436, 69437 would normally require the facilities available in an office surgical suite or in a hospital)			
69440	Middle ear exploration through postauricular or ear canal incision	10.0	30	3.0
	(For atticotomy, see 69601 et seq.)			
69450	Tympanolysis, transcanal			3.0
	EXCISION			
69501	Transmastoid antrotomy ("simple" mastoidectomy)	12.0	180	5.0
69502	Mastoidectomy; complete	18.0	180	5.0
69505	modified radical	20.0	180	6.0
69511	radical	20.0	180	6.0
	(For skin graft, see 15000 et seq.)			
	(For mastoidectomy cavity debridement, see 69220–69223)			
69530	Petrous apicectomy including radical mastoidectomy	30.0	180	6.0
69535	Resection temporal bone, external approach	BR	180	6.0
	(For middle fossa approach, see 69950–69970)			
69540	Excision aural polyp,	1.0	15	3.0
69550	Excision aural glomus tumor; transcanal	BR		3.0
69552	transmastoid	BR		3.0
69554	extended (extratemporal)	BR		3.0

		Unit Value	Follow-up Days=	Basic Anes@
REPAIR				
69601	Revision mastoidectomy; resulting in complete mastoidectomy..	15.0	180	6.0
69602	resulting in modified radical mastoidectomy.....	20.0	180	5.0
69603	resulting in radical mastoidectomy.....	20.0	180	5.0
69604	resulting in tympanoplasty ...	BR		5.0
	(For planned secondary tympanoplasty after mastoidectomy, see 69631, 69632)			
69605	with apicectomy.....	BR		
	(For skin graft, see 15120, 15121, 15260, 15261)			
69610	Tympanic membrane repair, with or without site preparation or perforation preparation for closure without patch.....	0.6	0	3.0
69611	Tympanic membrane patching with tissue graft.....	0.6	0	3.0
69620	Myringoplasty, (surgery confined to drumhead and donor area)...	13.0	180	3.0
69631	Tympanoplasty, without mastoidectomy (including canalplasty, atticotomy and/or middle ear surgery), initial or revision; without ossicular chain reconstruction.....	22.0	180	3.0
69632	with ossicular chain reconstruction, e.g., postfenestration.....	22.0	180	3.0
69633	with ossicular chain reconstruction and synthetic prosthesis (e.g., total ossicular replacement prosthesis, TORP).....	BR		3.0
69635	Tympanoplasty with antrotomy or mastoidotomy (including canalplasty, atticotomy, middle ear surgery, and/or tympanic membrane repair); without ossicular chain reconstruction	22.0	180	6.0
69636	with ossicular chain reconstruction.....	24.0	180	6.0
69637	with ossicular chain reconstruction and synthetic prosthesis (e.g., total ossicular replacement prosthesis, TORP).....	BR	0	6.0
69641	Tympanoplasty with mastoidectomy (including canalplasty, middle ear surgery, tympanic membrane repair); without ossicular chain reconstruction...	23.0	180	5.0
69642	with ossicular chain reconstruction.....	26.0	180	5.0
69643	with intact or reconstructed wall, without ossicular chain reconstruction	26.0	180	5.0
69644	with intact or reconstructed canal wall, with ossicular chain reconstruction	28.0	180	5.0
69645	radical or complete, without ossicular chain reconstruction.	24.0	180	5.0
69646	radical or complete, with ossicular chain reconstruction.	26.0	180	5.0
69650	Stapes mobilization	12.0	90	3.0
69660	Stapedectomy with reestablishment of ossicular continuity, with or without use of foreign material	20.0	90	5.0
69661	with footplate drill out	BR	90	5.0
	(For revision, see 69632)			
69666	Repair oval window fistula	20.0	180	5.0
69667	Repair round window fistula....	20.0	180	5.0
69670	Mastoid obliteration (separate procedure)	BR		6.0
	(69675 Tympanic neurectomy has been revised as 69676, 69677)			
69676	Tympanic neurectomy; unilateral	3.0	180	6.0
69677	bilateral	BR	180	6.0
OTHER PROCEDURES				
69700	Closure postauricular fistula, mastoid (separate procedure) ...	7.0	60	3.0
69720	Decompression, facial nerve, intratemporal; lateral to geniculate ganglion	24.0	180	6.0
69725	including medial to geniculate ganglion	26.0	180	6.0
69740	Suture facial nerve, intratemporal, with or without graft or decompression; lateral to geniculate ganglion	30.0	180	6.0
69745	including medial to geniculate ganglion	30.0	180	6.0
	(For extracranial suture of facial nerve, see 64864)			
69799	Unlisted procedure, middle ear...	BR		5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-470, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-22-470, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-22-470, filed 11/30/81, effective 1/1/82; 80-18-055 (Order 80-25), § 296-22-470, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-470, filed 1/30/74; Order 68-7, § 296-22-470, filed 11/27/68, effective 1/1/69.]

WAC 296-22-475 Inner ear.

		Unit Value	Follow-up Days=	Basic Anes@
INCISION, DESTRUCTION				
69801	Labyrinthotomy, with or without cryosurgery or other nonexcisional destructive procedures or tack procedure; transcanal	20.0	180	6.0
69802	with mastoidectomy.....	BR		6.0
69805	Endolymphatic sac operation; without shunt.....	BR		6.0
69806	with shunt	BR		6.0
69820	Fenestration semicircular canal .	22.0	180	6.0
69840	Revision fenestration operation..	11.0	180	6.0
EXCISION				
69905	Labyrinthectomy; transcanal ...	BR		6.0
69910	with mastoidectomy.....	BR		6.0
69915	Vestibular nerve section, translabyrinthine approach.....	BR	180	6.0
	(For transcranial approach, see 69950)			

		Unit Value	Follow-up Days=	Basic Anes@
69949	Unlisted procedure, inner ear ...	BR		6.0

TEMPORAL BONE, MIDDLE FOSSA APPROACH

	(For external approach, see 69535)			
69950	Vestibular nerve section, transcranial approach	BR		6.0
69955	Total facial nerve decompression and/or repair (may include graft)	BR		6.0
69960	Decompression internal auditory canal	BR		6.0
69965	Eustachian tuboplasty	BR		6.0
69970	Removal of tumor	BR		6.0

OTHER PROCEDURES

69979	Unlisted procedure, temporal bone, middle fossa approach	BR		6.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-22-475, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 80-18-055 (Order 80-25), § 296-22-475, filed 12/3/80, effective 3/1/81; Order 74-7, § 296-22-475, filed 1/30/74; Order 68-7, § 296-22-475, filed 11/27/68, effective 1/1/69.]

Chapter 296-23 WAC

RADIOLOGY, RADIATION THERAPY, NUCLEAR MEDICINE, PATHOLOGY, HOSPITAL, CHIROPRACTIC, PHYSICAL THERAPY, DRUGLESS THERAPEUTICS, NURSING, AND VOCATIONAL SERVICES

WAC

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296-23-50002 Transportation services.
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296-23-50004 Eyeglasses and contact lenses.
296-23-50005 Orthotics and prosthetics.
296-23-50006 Medical supplies.
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296-23-50008 Hospital beds and accessories.
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296-23-950 Massage therapy rules.
296-23-960 Massage—Modalities.
296-23-970 Occupational therapy rules.
296-23-980 Occupational therapy services.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-23-01003 Identification of x-rays. [Order 76-34, § 296-23-01003, filed 11/24/76, effective 1/1/77.] Repealed by Order 77-27, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, filed 12/1/77; Emergency Order 77-16, filed 9/6/77.

296-23-013 Footnotes. [Order 74-7, § 296-23-013, filed 1/30/74.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-060, 296-23-070, 296-23-075, 296-23-085, 296-23-090, 296-23-095, 296-23-100, 296-23-205, 296-23-210, 296-23-215, 296-23-220, 296-23-225, 296-23-230, 296-23-235, 296-23-240 and 296-23-245. [Order 68-7, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-7, filed 1/30/74.

296-23-105 Teletherapy. [Order 74-7, § 296-23-105, filed 1/30/74. Formerly WAC 296-23-085.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51-.04.030 and 51.16.120(3).

296-23-110 Brachytherapy. [Order 74-7, § 296-23-110, filed 1/30/74. Formerly WAC 296-23-090.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51-.04.030 and 51.16.120(3).

296-23-320 Private room—Critical cases. [Order 74-7, § 296-23-320, filed 1/30/74; Order 68-7, § 296-23-320, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-39, filed 11/22/74 and Order 75-39, filed 11/28/75.

296-23-325 Isolation of infected cases. [Order 70-12, § 296-23-325, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-325, filed 11/27/68, effective 1/1/69.] Repealed by Order 74-39, filed 11/22/74 and Order 75-39, filed 11/28/75.

296-23-345 Per diem rate. [Order 68-7, § 296-23-345, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-350 Bed accommodations. [Order 74-39, § 296-23-350, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-350, filed 1/30/74; Order 68-7, § 296-23-350, filed 11/27/68, effective 1/1/69.] Repealed by Order 75-39, filed 11/28/75, effective 1/1/76.

296-23-355 Rate affidavit. [Order 75-39, § 296-23-355, filed 11/28/75, effective 1/1/76; Order 74-7, § 296-23-355, filed 1/30/74; Order 70-12, § 296-23-355, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-355, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-360 Hospital daily service charge. [Order 74-7, § 296-23-360, filed 1/30/74; Order 68-7, § 296-23-360, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-365 Drugs. [Order 74-7, § 296-23-365, filed 1/30/74; Order 68-7, § 296-23-365, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-370 Dressing room and emergency room. [Order 74-39, § 296-23-370, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-370, filed 1/30/74; Order 68-7, § 296-23-370, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-375 Anesthetic material. [Order 74-7, § 296-23-375, filed 1/30/74; Order 68-7, § 296-23-375, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-380 Anesthetic administration—General. [Order 74-39, § 296-23-380, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-380, filed 1/30/74; Order 68-7, § 296-23-380, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-385 Anesthetic administration—Other. [Order 74-7, § 296-23-385, filed 1/30/74; Order 68-7, § 296-23-385, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-390 Surgery. [Order 74-39, § 296-23-390, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-390, filed 1/30/74; Order 68-7, § 296-23-390, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-395 Recovery room—Use of. [Order 74-7, § 296-23-395, filed 1/30/74; Order 68-7, § 296-23-395, filed 11/27/68, effective 1/1/69.] Repealed by 81-24-041 (Order 81-28), filed 11/30/81, effective 1/1/82. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-400 Oxygen. [Order 74-7, § 296-23-400, filed 1/30/74; Order 68-7, § 296-23-400, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-405 Parenteral fluid therapy. [Order 74-7, § 296-23-405, filed 1/30/74; Order 68-7, § 296-23-405, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-410 Use of cast room for application of casts. [Order 74-7, § 296-23-410, filed 1/30/74; Order 68-7, § 296-23-410, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-415 Cast—Materials only. [Order 74-7, § 296-23-415, filed 1/30/74; Order 68-7, § 296-23-415, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-420 Fracture appliances. [Order 74-7, § 296-23-420, filed 1/30/74; Order 68-7, § 296-23-420, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-425 Laboratory. [Order 74-7, § 296-23-425, filed 1/30/74; Order 68-7, § 296-23-425, filed 11/27/68, effective 1/1/69.] Repealed by Order 76-34, filed 11/24/76, effective 1/1/77.

296-23-510 Osteopathic office visits. [Order 68-7, § 296-23-510, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-23-515 Osteopathic hospital visits. [Order 68-7, § 296-23-515, filed 11/27/68, effective 1/1/69.] Repealed by Order 70-12, filed 12/1/70, effective 1/1/71.

296-23-61001 Who may treat. [Order 76-34, § 296-23-61001, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61002 Acceptance of rules and fees. [Order 76-34, § 296-23-61002, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61003 Penalties. [Order 76-34, § 296-23-61003, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61004 Initial treatment and report of accident. [Order 76-34, § 296-23-61004, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29),

filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61005 Treatment following initial treatment. [Order 77-27, § 296-23-61005, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61005, filed 12/1/77; Emergency Order 77-16, § 296-23-61005, filed 9/6/77; Order 76-34, § 296-23-61005, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61006 Rejected and closed claims. [Order 76-34, § 296-23-61006, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61007 Treatment beyond 60 days. [Order 76-34, § 296-23-61007, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61008 Doctor's supplemental report. [Order 76-34, § 296-23-61008, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61009 Transfer of practitioners. [Order 77-27, § 296-23-61009, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61009, filed 12/1/77; Emergency Order 77-16, § 296-23-61009, filed 9/6/77; Order 76-34, § 296-23-61009, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61010 Concurrent treatment. [Order 76-34, § 296-23-61010, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-61011 Billing procedures. [Order 77-27, § 296-23-61011, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-61011, filed 12/1/77; Emergency Order 77-16, § 296-23-61011, filed 9/6/77; Order 76-34, § 296-23-61011, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81001 Who may treat. [Order 76-34, § 296-23-81001, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81002 Acceptance of rules and fees. [Order 76-34, § 296-23-81002, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81003 Penalties. [Order 76-34, § 296-23-81003, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81004 Initial treatment and report of accident. [Order 76-34, § 296-23-81004, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81005 Treatment following initial treatment. [Order 77-27, § 296-23-81005, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81005, filed 12/1/77; Emergency Order 77-16, § 296-23-81005, filed 9/6/77; Order 76-34, § 296-23-81005, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81006 Rejected and closed claims. [Order 76-34, § 296-23-81006, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81007 Treatment beyond 60 days. [Order 76-34, § 296-23-81007, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81008 Doctor's supplemental report. [Order 76-34, § 296-23-81008, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81009 Transfer of practitioners. [Order 77-27, § 296-23-81009, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81009, filed 12/1/77; Emergency Order 77-16, § 296-23-81009, filed 9/6/77; Order 76-34, § 296-23-81009, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81010 Concurrent treatment. [Order 76-34, § 296-23-81010, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-81011 Billing procedures. [Order 77-27, § 296-23-81011, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-81011, filed 12/1/77; Emergency Order 77-16, § 296-23-81011, filed 9/6/77; Order 76-34, § 296-23-81011, filed 11/24/76, effective 1/1/77.] Repealed by 81-01-100 (Order 80-29), filed 12/23/80, effective 3/1/81. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3).

296-23-940 Vocational service providers. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-940, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9401 Reasons for holding provider ineligible for referral. [Statutory Authority: RCW 51.04.020(4) and 51.04-.030. 82-24-050 (Order 82-39), § 296-23-9401, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9402 Time lines. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9402, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9403 Services requiring authorization. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9403, filed 11/29/82, effective 1/1/83.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9408 Vocational fee schedule. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-9408, filed 8/2/83. Statutory Authority: RCW 51.04.020(4) and 51.04.030. 82-24-050 (Order 82-39), § 296-23-9408, filed 11/29/82, effective 1/1/83.] Repealed by 83-24-016 (Order 83-35), filed 11/30/83, effective 1/1/84. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9409 Vocational services. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-9409, filed 11/30/83, effective 1/1/84.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

296-23-9410 Retraining service. [Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-9410, filed 11/30/83, effective 1/1/84.] Repealed by 86-06-032 (Order 86-19), filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4) and 51.04.030.

RADIOLOGY

WAC 296-23-010 General information--Radiology. Rules and billing procedures pertaining to all practitioners rendering services to injured workers are presented in the general instruction section beginning with WAC 296-20-010. Some of the commonalities are repeated here for the convenience of those doctors referring to the radiology section.

UNIT VALUE: The following values apply only when these services are performed by or under the responsible supervision of a doctor.

The unit value represents x-ray service units appropriate for billing charges for professional services plus expenses of nonradiologist personnel, materials, facilities and space used, for diagnostic or therapeutic services rendered, but excludes the cost of radio-isotopes. This value is applicable in any situation in which a single charge is made to include both professional services and the cost involved in providing that service.

PROFESSIONAL COMPONENT: The professional component (PC) represents the professional services of the doctor, including examination of the patient, when indicated, performance and/or supervision of the procedure, interpretation and reporting of the examination and consultation with the attending doctor. This component is applicable in any situation in which the doctor submits a charge for these professional services only. It is distinct from and does not include the time devoted by technologists, nor costs of materials, equipment and space.

Values for office and hospital visits, consultation and other services are listed in the various sections of this fee schedule.

Practitioners should identify the appropriate section for their area of health care practice.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-010, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-010, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-010, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-010, filed 1/30/74; Order 71-6, § 296-23-010, filed 6/1/71; Order 70-12, § 296-23-010, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-010, filed 11/27/68, effective 1/1/69.]

WAC 296-23-01001 Injection procedures. Values for injection procedures include all usual pre and postinjection care specifically related to the injection procedure, necessary local anesthesia, placement of needle or catheter, and injection of contrast media.

Vascular injection procedures are listed in the cardiovascular section. Other injection procedures are listed in the appropriate sections. The injection procedure is included in the unit value for radiographic procedures marked with a #.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01001, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-01001, filed 11/24/76, effective 1/1/77.]

WAC 296-23-01002 Custody of x-rays. (1) Radiographs should not be sent to the department or self-insurer unless they are requested for comparison and interpretation in determining a permanent disability, administrative or legal decisions and for cases in litigation. X-rays must be retained for a period of ten years by the radiologist or the attending doctor.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers and/or the board of industrial insurance appeals.

(3) In cases where the injured worker transfers from one doctor to another, the former attending doctor will immediately forward all films in his possession to the new attending doctor.

(4) When a doctor's office is closed because of death, retirement or upon leaving the state, department approved custodial arrangements must be made to insure availability on request. If a radiological office is closed for any of the previously listed reasons or because the partnership or corporation is being dissolved, disposition of x-rays for industrial injuries will be handled in the same manner. In the event custodial arrangements are to be made, the department must approve the arrangements prior to transfer of x-rays to the custodian so as to assure their availability to the department or self-insurer upon request.

(5) Reports of x-ray findings must accompany bills for x-ray services. See WAC 296-20-125 for additional billing information.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-01002, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-01002, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-01002, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-01002, filed 12/1/77; Emergency Order 77-16, § 296-23-01002, filed 9/6/77; Order 76-34, § 296-23-01002, filed 11/24/76, effective 1/1/77.]

WAC 296-23-01004 Billing procedures. (1) Complete billing instructions appear in WAC 296-20-125.

(2) Listed values for x-ray services are for combined technical and professional components, except as otherwise indicated. Appropriate modifiers and charges should be used when billing for only technical or professional component. When billing for technical component only, the total value should be reduced by the professional component value.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-01004, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-01004, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-01004, filed 12/1/77; Emergency Order 77-16, § 296-23-01004, filed 9/6/77; Order 76-34, § 296-23-01004, filed 11/24/76, effective 1/1/77.]

WAC 296-23-01005 Duplication of x-rays and extra views. Every attempt should be made to minimize number of x-rays taken for injured workers. The attending doctor or any other person or institution having possession of x-rays which pertain to the injury and are

deemed to be needed for diagnostic or treatment purposes should make these x–rays available upon request.

The department or self–insurer will not authorize or pay for additional x–rays when recent x–rays are available except when presented with adequate information regarding the need to re–x–ray.

Extra views – may be billed under modifier code '–22'. However, such billing must be supported by an explanation of why extra views were necessary. When description of procedure indicates "minimum of _____ views" usually no additional amount will be paid for extra views.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–01005, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–01005, filed 11/24/76, effective 1/1/77.]

WAC 296–23–01006 Radiology, radiation therapy, nuclear medicine and modifiers. Listed services and procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate modifier code which is a two digit number placed after the usual procedure number from which it is separated by a hyphen. If more than one modifier is used, the "multiple modifiers" code placed first after the procedure code indicates that one or more additional modifier codes will follow. Modifiers commonly used in RADIOLOGY (INCLUDING NUCLEAR MEDICINE AND DIAGNOSTIC ULTRASOUND) are as follows:

–22 UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, it may be identified by adding modifier '–22' to the usual procedure number. List modified value. A report may also be appropriate. Note: Modifier –22 may be utilized with computerized tomography numbers when additional slices are required or a more detailed examination is necessary.

–25 DIGITAL RADIOLOGY (e.g., digital subtraction angiography, digital fluoroscopy, digital radiography): When this technique is utilized, the modifier '–25' may be appended to the appropriate five digit number of the radiologic procedure to indicate that the digital modality was applied. The modifier would be applied to both the supervision and interpretation service and complete procedure. When the supervision and interpretation service code is utilized and the injection is done by a second physician, the modifier need not be applied to the surgical injection codes.

–26 PROFESSIONAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific diagnostic and therapeutic services,) are a combination of a physician component and a technical component. When the physician component is billed separately, the procedure may be identified by adding the modifier '–26' to the usual procedure number and value as appropriate. The total cost of procedure cannot exceed the basic unit value.

–27 TECHNICAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific diagnostic and therapeutic services) are a combination of a physician component and a technical component. When the technical component is billed separately, the procedure may be identified by adding the modifier '–27' to the usual procedure number and value as appropriate. The total cost of procedure cannot exceed the basic unit value.

–50 MULTIPLE OR BILATERAL PROCEDURES: When multiple or bilateral procedures are provided at the same operative session, the first major procedure may be reported as listed. The secondary or lesser procedure(s) may be identified by adding the modifier '–50' to the usual procedure number(s) and value at 50 percent of the listed values unless otherwise indicated.

–52 REDUCED SERVICES: Under certain circumstances a service or procedure is partially reduced or eliminated at the physician's election. Under these circumstances the service provided can be identified by its usual procedure number and the addition of the modifier '–52' signifying that the service is reduced. This provides a means of reporting reduced services at reduced charge without disturbing the identification of the basic service. Note: Modifier –52 may be utilized with computerized tomography numbers for a limited study or a follow–up study.

–62 TWO SURGEONS: Under certain circumstances the skills of two surgeons (usually with different skills) may be required in the management of a specific surgical procedure. Under such circumstances the services of each may be identified by adding the modifier '–62' to the procedure number used by each surgeon for reporting his services.

–66 SURGICAL TEAM: Under some circumstances, highly complex procedures (requiring the concomitant services of several physicians, often of different specialties, plus other highly skilled, specially trained personnel and various types of complex equipment) are carried out under the 'surgical team' concept. Such circumstances may be identified by each participating physician with the addition of the modifier '–66' to the basic procedure number used for reporting services.

–75 CONCURRENT CARE, SERVICES RENDERED BY MORE THAN ONE PHYSICIAN: When the patient's condition requires the additional services of more than one physician, each physician may identify his or her services by adding the modifier '–75' to the basic service performed.

–76 REPEAT PROCEDURE BY SAME PHYSICIAN: The physician may need to indicate that a procedure or service was repeated subsequent to the original

service. This may be reported by adding the modifier '–76' to the procedure code of the repeated service.

–77 REPEAT PROCEDURE BY ANOTHER PHYSICIAN: The physician may need to indicate that a basic procedure performed by another physician had to be repeated. This may be reported by adding modifier '–77' to the repeated service.

–80 ASSISTANT SURGEON: Surgical assistant services may be identified by adding the modifier '–80' to the usual procedure number(s).

–90 REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by a party other than the treating or reporting physician the procedure(s) may be identified by adding the modifier '–90' to the usual procedure number and shall be billed as charged to the physician.

–99 MULTIPLE MODIFIERS: Under certain circumstances two or more modifiers may be necessary to completely delineate a service. In such situations modifier '–99' should be added to the basic procedure, and other applicable modifiers may be listed as a part of the description of the service. Value in accordance with appropriate modifiers.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–01006, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–23–01006, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–01006, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–01006, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–01006, filed 11/24/76, effective 1/1/77.]

WAC 296–23–01007 Unlisted service or procedure. A service or procedure may be provided that is not listed in this fee schedule. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296–23–01008 below. The "unlisted procedures" and accompanying codes for RADIOLOGY (including nuclear medicine and diagnostic ultrasound) are as follows:

76499 Unlisted diagnostic radiologic procedure
76629 Unlisted echocardiography procedure
76999 Unlisted diagnostic ultrasound procedure
77299 Unlisted procedure, therapeutic radiology clinical treatment planning
77399 Unlisted procedure, medical radiation physics, dosimetry and treatment devices
77499 Unlisted procedure, therapeutic radiology clinical treatment management
77699 Unlisted procedure, radiation therapy treatment aid
77749 Unlisted procedure, internal radiation dosimetry
77799 Unlisted procedure, clinical brachytherapy
77999 Unlisted procedure, radiation therapy special service
78099 Unlisted endocrine procedure, diagnostic nuclear medicine
78199 Unlisted hematopoietic, R–E and lymphatic procedure, diagnostic nuclear medicine
78299 Unlisted gastrointestinal procedure, diagnostic nuclear medicine
78399 Unlisted musculoskeletal procedure, diagnostic nuclear medicine
78499 Unlisted cardiovascular procedure, diagnostic nuclear medicine
78599 Unlisted respiratory procedure, diagnostic nuclear medicine
78699 Unlisted nervous system procedure, diagnostic nuclear medicine
78799 Unlisted genitourinary procedure, diagnostic nuclear medicine
78999 Unlisted miscellaneous procedure, diagnostic nuclear medicine
79999 Unlisted radionuclide therapeutic procedure.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–23–01007, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–01007, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–01007, filed 11/24/76, effective 1/1/77.]

WAC 296–23–01008 Special report. A service that is rarely provided, unusual, variable, or new, may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and the need for the procedure; and the time, effort and equipment necessary to provide the service. Additional items which may be helpful might include: Complexity of symptoms, final diagnosis, pertinent physical findings, diagnostic and therapeutic procedures, concurrent problems, and follow–up care.

[Order 76–34, § 296–23–01008, filed 11/24/76, effective 1/1/77.]

WAC 296–23–015 Head and neck.

		Unit Value
70002	Pneumoencephalography, supervision and interpretation only	16.0
70003	complete, procedure	40.0
	(For injection procedure only for pneumoencephalography, see 62286)	
70010	Myelography, posterior fossa supervision and interpretation only	BR
70011	complete procedure	BR
	(For injection procedure, see 61052)	
70015	Cisternography, positive contrast; supervision and interpretation only	BR
70016	complete procedure	BR
	(For injection procedure only for cisternography, see 61053)	
70020	Ventriculography, air or positive contrast supervision and interpretation only	8.0
70021	positive contrast, supervision and interpretation only	24.0

		Unit Value
	(For injection procedures for ventriculography, see 61025, 61030, 61120)	
70022	Stereotaxic localization	BR
70030	Radiologic examination, eye, for detection of foreign body	8.8
70040	for localization of foreign body (does not include detection)	14.0
70050	for detection and localization of foreign body	18.0
70100	Radiologic examination, mandible, less than four views	6.0
70110	complete, minimum of four views	10.0
70120	Radiologic examination, mastoid(s), less than three views per side	6.0
70130	complete minimum of three views per side	12.0
70134	Radiologic examination, internal auditory meati, complete	12.0
70140	Radiologic examination, facial bones, less than three views	6.0
70150	complete, minimum of three views	10.0
70160	Radiologic examination, nasal bones complete, minimum of three views	6.4
70170	Nasolacrimal duct (dacryocystography) supervision and interpretation only	4.0
70171	complete procedure	10.0
	(For injection procedure for dacryocystography, see 68850)	
70190	Radiologic examination, optic foramina,	6.0
70200	orbits, complete, minimum of four views	8.0
70210	Paranasal sinuses, less than three views	5.0
70220	Radiologic examination, sinuses, paranasal, complete, minimum of three views without contrast studies	8.8
70230	with contrast studies, supervision and interpretation only	10.0
70231	with contrast studies, complete procedure	16.0
70240	Radiologic examination, sella turcica	5.0
70250	Radiologic examination, skull, limited, less than four views, with or without stereo	6.0
70260	complete, minimum of four views, with or without stereo	12.0
70300	Radiologic examination, teeth, single view	2.0
70310	partial examination, less than full mouth	4.0
70320	complete examination, full mouth	8.0
70328	Radiologic examination, temporomandibular joints, unilateral, open and closed mouth	6.0
70330	bilateral	8.8
70332	Temporomandibular joint arthrotomography (includes a contrast arthrogram and appropriate laminographic studies); supervision and interpretation only	8.4
70333	complete procedure	21.1
	(For injection procedure only for arthrotomography, see 21116)	
70350	Cephalogram (orthodontic)	4.0
70355	Orthopantogram	10.0
70360	Radiologic examination, neck for soft tissues	4.0
70370	pharynx or larynx, including fluoroscopy and/or magnification technique	8.0
70373	Laryngography, contrast; supervision and interpretation only	9.6
70374	complete procedure	24.0
	(For injection procedure only for laryngography, see 31708)	
70380	Radiologic examination, salivary gland for calculus	6.4
70390	Sialography supervision and interpretation only	3.2
70391	complete procedure	8.0
	(For injection procedure only for sialography, see 42550)	
70400	Orbitography, air or positive contrast; supervision and interpretation only	BR
70401	complete procedure	BR
	(For injection procedure only for orbitography, see 67510)	
70450	Computerized tomography, head; without contrast material	58.0
70460	with contrast material	64.0
70470	without intravenous contrast material, followed by contrast materials and further sections	71.0
	(For coronal, sagittal, and/or oblique sections, see 76375)	
70480	Computerized axial tomography, orbit, sella, or posterior fossa or outer, middle, or inner ear; without contrast material	58.0
70481	with contrast material	64.0
70482	without contrast material, followed by contrast material and further sections	71.0
	(For coronal, sagittal, and/or oblique sections, see 76375)	
70486	Computerized axial tomography, maxillofacial area; without contrast material	58.0
70487	with contrast material(s)	64.0
70488	without contrast material, followed by contrast material(s) and further sections	71.0
	(For coronal, sagittal, and/or oblique sections, see 76375)	
70490	Computerized axial tomography, soft issue neck; without contrast material	BR
70491	with contrast material(s)	BR
70492	without contrast material followed by contrast material(s) and further sections	BR
	(For coronal, sagittal, and/or oblique sections, see 76375)	
	(For cervical spine, see 72125, 72126)	
70550	Magnetic resonance (e.g., proton) imaging; brain	BR
70552	brain stem	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-015, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-015, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-015, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-015, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-015, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-061 (codified as WAC 296-23-015), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-015, filed 1/30/74; Order 68-7, § 296-23-015, filed 11/27/68, effective 1/1/69.]

WAC 296-23-020 Chest.

		Unit Value
	(71000 Chest minifilm has been deleted)	
71010	radiologic examination, chest, single view, frontal	4.0
71015	stereo, frontal	5.0
71020	radiologic examination, chest, two views, frontal and lateral;	7.0
71021	with apical lordotic procedure	7.2
71022	with oblique projections	7.2
71023	with fluoroscopy	
71030	radiologic examination, chest, complete, minimum of four views;	8.0
71034	with fluoroscopy	10.0
	(For separate chest fluoroscopy, see 76000)	
71035	Radiologic examination, chest, special views, e.g., lateral decubitus, Bucky studies	BR
71036	Fluoroscopic localization for needle biopsy of intrathoracic lesion, including follow-up films	BR
71038	Fluoroscopic localization for transbronchial biopsy or brushing	BR
	(For biopsy procedure, see 32420)	
71040	Bronchography, unilateral; supervision and interpretation only	5.6
71041	complete procedure	14.0
71060	bronchography, bilateral; supervision and interpretation only	8.8
71061	complete procedure	22.0
	(For injection procedure only for bronchography, see 31715, 31710)	
71090	Insertion pacemaker, fluoroscopy and radiography, supervision and interpretation only	BR
71100	Ribs, unilateral, minimum of two views	7.2
71101	including posteroanterior chest; minimum of three views	11.2
71110	bilateral, minimum of three views	10.0
71111	including posteroanterior chest, minimum of four views	14.0
71120	Sternum, minimum of two views	6.0
71130	Sternoclavicular joint(s), minimum of three views	6.0
71250	Computerized tomography, thorax; without contrast material	77.0
71260	with contrast material(s)	84.0
71270	without contrast material, followed by contrast material and further sections	90.0
	(For coronal, sagittal, and/or oblique sections, see 76375)	
71550	Magnetic resonance (e.g., proton) imaging, chest (e.g., for evaluation of hilar and mediastinal lymphadenopathy)	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-020, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-020, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-020, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-020, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-020, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-064 (codified as WAC 296-23-020), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-020, filed 1/30/74; Order 68-7, § 296-23-020, filed 11/27/68, effective 1/1/69.]

WAC 296-23-025 Spine and pelvis.

		Unit Value
72010	Spine, entire, survey study (A-P & lateral)	16.0
72020	Radiologic examination, spine, single view, specify level	6.5
72040	cervical, A-P and lateral	6.0
72050	complete, minimum of four views	10.0
72052	including oblique and flexion and extension views	15.2
72070	thoracic, A-P and lateral	9.0
72072	thoracic, A-P and lateral, including swimmer's view of the cervicothoracic junction	12.0
72074	thoracic, complete inc. obliques, minimum of four views	16.0
72080	thoraco-lumbar, A-P and lateral	9.0
72090	scoliosis study, including supine and erect studies	6.0
72100	lumbo-sacral, A-P and lateral	9.0
72110	lumbosacral, complete, with oblique views	16.0
72114	including bending views	18.5
72120	bending views only, minimum of four views	10.0
72125	Computerized axial tomography, cervical spine; without contrast material	62.4
72126	with contrast material	72.8
	(For injection procedure, see 62284)	
72128	Computerized axial tomography, thoracic spine; without contrast material	62.4
72129	with contrast material	72.8
	(For injection procedure, see 62284)	
72131	Computerized axial tomography, lumbar spine; without contrast material	60.0
72132	with contrast material	70.0
	(For injection procedure, see 62284)	
	(For coronal, sagittal, and/or oblique sections, see 76375)	
72140	Magnetic resonance (e.g., proton) imaging; spinal cord	
	(72145 has been deleted. To report, see 72125-72132)	
72170	Pelvis, A-P only	5.0
72180	stereo	6.4
72190	complete, minimum of three views	8.0
	(For pelvimetry, see 74710)	
72192	Computerized tomography, pelvis; without contrast material	
72193	with contrast material(s)	
72194	without contrast material, followed by contrast material(s) and further sections	
	(For pelvimetry, see 74710)	
72200	Sacro-iliac joints, less than three views	5.0
72202	complete, minimum of three views	8.0
72220	Sacrum and coccyx, minimum of two views	6.4
72240	Myelography, cervical supervision and interpretation only	7.2
72241	complete procedure	18.0
72255	thoracic supervision and interpretation only	7.2
72256	complete procedure	18.0
72265	lumbosacral supervision and interpretation only	7.2

		Unit Value
72266	complete procedure	18.0
72270	entire spinal canal supervision and interpretation only	12.0
72271	complete procedure	30.0
	(For injection procedures for myelography, see 62284)	
72285	Diskography, cervical supervision and interpretation only	8.0
72286	complete procedure	20.0
72295	lumbar supervision and interpretation only	8.0
72296	complete procedure	20.0
	(For injection procedures for diskography, see 62290, 62291)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-025, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-025, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-025, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-025, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-025, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-067 (codified as WAC 296-23-025), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-025, filed 1/30/74; Order 68-7, § 296-23-025, filed 11/27/68, effective 1/1/69.]

WAC 296-23-030 Upper extremities.

		Unit Value
73000	Clavicle	4.8
73010	Scapula	6.0
73020	Shoulder, limited, one view	4.0
73030	complete, minimum of two views	6.0
73040	arthrography supervision and interpretation only	4.0
73041	complete procedure	10.0
	(For injection procedure for arthrography, see 23350)	
73050	Acromio-clavicular joints, bilateral, with or without weighted distraction	7.0
73060	Humerus, minimum of two views	4.8
73070	Elbow, limited, A-P and lateral	4.8
73080	complete, minimum of three views	6.0
73085	Radiologic examination, elbow, arthrography; supervision and interpretation only	4.0
73086	complete procedure	10.0
	(For injection procedure only for arthrography, see 24220)	
73090	Forearm, including one joint, A-P and lateral	4.8
73092	upper extremity, infant, minimum of two views	3.6
73100	Wrist, limited, A-P and lateral	4.0
73110	complete, minimum of three views	6.0
73115	Radiologic examination, wrist, arthrography; supervision and interpretation only	4.0
73116	complete procedure	10.0
	(For injection procedure only for arthrography, see 25246)	
73120	Hand, limited, minimum of two views	4.0
73130	complete, minimum of three views	6.0
73140	Finger(s), minimum of two views	3.6
73200	Computerized tomography, upper extremity; without contrast material	58.0
73201	with contrast material(s)	64.0
73202	without contrast material, followed by contrast material(s) and further sections	71.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-030, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-030, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-030, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-030, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-071 (codified as WAC 296-23-030), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-030, filed 1/30/74; Order 68-7, § 296-23-030, filed 11/27/68, effective 1/1/69.]

WAC 296-23-035 Lower extremities.

		Unit Value
73500	Radiologic examination, hip, unilateral, one view	5.0
73510	complete, minimum of two views	7.0
73520	Radiologic examination, hips, bilateral, complete minimum of two views of each hip (including A-P of pelvis)	9.6
73525	Radiologic examination, hip, arthrography; supervision and interpretation only	BR
73526	complete procedure	BR
	(For injection procedure only for arthrography, see 27093, 27094)	
73530	Radiologic examination, hip, during operative procedure, up to four studies	16.0
73531	each additional study, over four	3.0
73540	Radiologic examination, hip and pelvis, infant or child, minimum of two views	6.4
73550	Radiologic examination, femur (thigh), A-P and lateral	6.0
73560	Radiologic examination, knee, A-P and lateral	4.4
73562	A-P and lateral, with oblique(s), minimum three views	6.4
73564	complete, including obliques, and/or tunnel, and/or patella and/or standing views	8.4
73580	Radiologic examination, knee, arthrography supervision and interpretation only	6.4
73581	complete procedure	16.0
	(For injection procedure for arthrography, see 27370)	
73590	Radiologic examination, tibia and fibula (leg), including one joint, A-P and lateral	4.8
73592	lower extremity, infant, minimum of two views	4.0
73600	Radiologic examination, ankle, limited, A-P and lateral	4.4
73610	complete, minimum of three views	6.0
73615	Radiologic examination, ankle, arthrography; supervision and interpretation only	4.0
73616	complete procedure	10.0
	(For injection procedure only for arthrography, see 27648)	
73620	Radiologic examination, foot, limited, A-P and lateral	4.0
73630	complete, minimum of three views	5.6

		Unit Value
73650	Radiologic examination, calcaneus, minimum of two views	4.4
73660	Toe(s), minimum of two views	3.6
73700	Computerized tomography, lower extremity; without contrast material	58.0
73701	with contrast material(s)	64.0
73702	without contrast material, followed by contrast materials and further sections	71.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-035, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-035, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-035, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-035, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-035, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-074 (codified as WAC 296-23-035), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-035, filed 1/30/74; Order 68-7, § 296-23-035, filed 11/27/68, effective 1/1/69.]

WAC 296-23-040 Abdomen.

		Unit Value
74000	Abdomen, single view (KUB) A-P	6.0
74010	with additional oblique or cone view	8.0
74020	complete, includes ducubitus and/or erect views	11.0
74022	complete acute abdomen series, including supine, erect, and/or decubitus views, upright PA chest	BR
74150	Computerized tomography, abdomen; without contrast material	77.0
74160	with contrast material	84.0
74170	without contrast material, followed by contrast material and further sections	90.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-040, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-040, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-040, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-040, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-040, filed 11/24/76, effective 1/1/77; Order 74-39, § 296-23-077 (codified as WAC 296-23-040), filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-040, filed 1/30/74; Order 68-7, § 296-23-040, filed 11/27/68, effective 1/1/69.]

WAC 296-23-045 Gastrointestinal tract.

		Unit Value
74210	Pharynx and/or cervical esophagus	8.8
74220	Esophagus	8.8
74230	Pharynx and/or esophagus, by cineradiography	12.0
74235	Removal of foreign body(s), esophageal, with use of Foley-type catheter under fluoroscopic guidance	BR
74240	Uppergastrointestinal tract, with or without delayed films, without KUB	14.0
74241	with KUB	15.2
74245	with small bowel, includes multiple serial films	17.6
74246	Radiological exam gastrointestinal tract, upper, air contrast, with specific high density barium, effervescent agent, with or without glucagon, with or without delayed films; without KUB	BR
74247	with KUB	BR
74250	Small bowel, includes multiple serial films	14.0
74260	Duodenography, hypotonic	BR
74270	Colon, barium enema	12.0
74280	Air contrast with specific high density barium with or without glucagon	14.0
74285	high kilovoltage technique for polyp study	BR
74290	Cholecystography, oral contrast	9.6
74291	repeat examination, same study or multiple exam	4.8
74300	Cholangiography, operative	10.0
74301	operative, additional set	3.0
74305	postoperative	12.0
	(For biliary duct stone extraction, percutaneous, see 47630; via basket catheter, see 74327)	
74310	intravenous	16.0
74315	oral	12.0
74320	percutaneous, transhepatic supervision and interpretation only	6.4
74321	complete procedure	16.0
	(For injection procedure for percutaneous transhepatic cholangiography, see 47500)	
74325	Diagnostic pneumoperitoneum; supervision and interpretation only	BR
74326	complete procedure	BR
	(For injection procedure only for pneumoperitoneum, see 49400)	
74327	Postoperative biliary duct stone removal, fluoroscopic monitoring and radiography	BR
74328	Endoscopic catheterization of the biliary ductal system, fluoroscopic monitoring and radiography	BR
74329	Endoscopic catheterization of the pancreatic ductal system, fluoroscopic monitoring and radiography	BR
74330	Combined endoscopic catheterization of the biliary and pancreatic ductal systems, fluoroscopic monitoring and radiography	BR
	(74331 has been deleted. For endoscopic sphincterotomy, use 43262)	
74340	Introduction of long gastrointestinal tube (e.g., Miller-Abbott), with multiple fluoroscopies and films	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-045, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-045, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-045, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-045, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-045, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-045, filed 1/30/74; Order 68-7, § 296-23-045, filed 11/27/68, effective 1/1/69.]

WAC 296-23-050 Urinary tract.

		Unit Value
	(For kidney, ureter and bladder, see 74000-74020)	
74400	Urography, (pyelography) intravenous, including kidneys, ureters, and bladder	15.2
74405	with special hypertensive contrast concentration and/or clearance studies	16.0

		Unit Value
74410	Urography, infusion, drip technique and/or bolus technique;	20.0
74415	with nephrotomography	26.0
74420	retrograde, with or without KUB	12.0
74425	Urography, antegrade, (pyelostogram, nephrostogram, loopogram); supervision and interpretation only	BR
74426	complete procedure	BR
	(For injection procedure only, see 50394, 50684, 50690)	
74430	Cystography, minimum of three views, supervision and interpretation only	3.5
74431	Cystography, complete procedure	8.8
	(For injection procedure for cystography, see 51600, 51605)	
74440	Vasography, vesiculography, or epididymography supervision and interpretation only	3.5
74441	complete procedure	8.8
	(For injection procedure, see 52010, 52110, 55300)	
74445	Corpora cavernosography; supervision and interpretation only	BR
74446	complete procedure	BR
	(For injection procedure only, see 54230)	
74450	Urethrocystography, retrograde	3.8
74451	complete procedure	9.6
74455	voiding	5.6
74456	complete procedure	14.0
	(For injection procedure only for voiding urethrocystography, see 51600)	
74460	Retroperitoneal pneumography	4.8
74461	complete procedure	12.0
	(For injection procedure for retroperitoneal pneumography, see 49430)	
74470	Translumbar renal cyst study (contrast visualization) or antegrade urography	4.0
74471	complete procedure	10.0
	(For injection procedure only for translumbar renal cyst study, see 50390)	
74475	Introduction of intracatheter or catheter into renal pelvis for drainage and/or injection, percutaneous, with fluoroscopic monitoring and radiography; supervision and interpretation only	BR
74476	complete procedure	BR
	(For injection procedure only, see 50392)	
74480	Introduction of ureteral catheter or stent into ureter through renal pelvis for drainage and/or injection, percutaneous, with fluoroscopic monitoring and radiography; supervision and interpretation only	BR
74481	complete procedure	BR
	(For injection procedure only, see 50393)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-050, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-050, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-050, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-050, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-050, filed 1/30/74; Order 68-7, § 296-23-050, filed 11/27/68, effective 1/1/69.]

WAC 296-23-055 Female genital tract.

		Unit Value
	(For abdomen and pelvis, see 74000-74170, 72170-72190)	
74710	Pelvimetry with or without placental localization	10.0
74720	Abdomen for fetal age, fetal position and/or placental localization, single view	4.0
74725	multiple views	6.0
74730	Placentography with contrast cystography; supervision and interpretation only	BR
74731	complete procedure	BR
74740	Hysterosalpingography supervision and interpretation only	4.3
74741	complete procedure	10.8
	(For injection procedure for hysterosalpingography, see 58340)	
74760	Pelvic pneumography	4.0
74761	complete procedure	10.0
	(For injection procedure for pelvic pneumography, see 49440)	
74770	Radiologic examination, fetal study, intrauterine contrast visualization; supervision and interpretation only	BR
74771	complete procedure	BR
74775	Perineogram (e.g., vaginogram, for sex determination or extent of anomalies)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-055, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-055, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-055, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-055, filed 1/30/74; Order 68-7, § 296-23-055, filed 11/27/68, effective 1/1/69.]

WAC 296-23-065 Vascular system.

(For vascular injection procedures, see 36000-36299)

(For cardiac fluoroscopy, see 93280)

(For cardiac catheterization, see 93501-93599)

When multiple vascular radiographic procedures are performed at the same time (e.g., aortic arch study plus renal arteriogram), the total value shall be the value for the major procedure plus 50% of the value for the lesser procedure(s) unless otherwise indicated. See modifier -5. The cost of catheters, drugs and contrast media is included in the listed value for the radiographic procedure.

		Unit Value
HEART		
75500	Angiocardiography, by cineradiography supervision and interpretation only	8.8
75501	complete procedure (including catheterization)	22.0
75505	Angiocardiography by serialography (single plane;) supervision and interpretation	

		Unit Value
	only	9.2
75506	complete procedure (including catheterization)	23.0
75507	Angiocardiography by serialography, multi-plane; supervision and interpretation only	18.4
75509	complete procedure (including catheterization)	46.0
	(75510, 75511 CO2 or positive contrast angiocardiography have been deleted. To report, use 76499.)	
75519	Cardiac radiography, selective cardiac catheterization; right side, supervision and interpretation only	17.2
75520	complete procedure	43.0
75523	left side, supervision and interpretation only	8.6
75524	left side, complete procedure	21.5
75528	Cardiac radiography, selective cardiac catheterization, right and left side, complete procedure	55.0
75552	Magnetic resonance (e.g., proton) imaging, myocardium	BR

AORTA AND ARTERIES

(For injection procedure only, see 36100-36299)

(For digital radiology, use modifier -25, page 290)

Aortography

75600	thoracic or abdominal, without serialography supervision and interpretation only	8.0
75601	complete procedure	20.0
75605	by serialography supervision and interpretation only	11.0
75606	complete procedure	30.0
75620	Abdominal, including lower extremities, without serialography	32.0
75622	Abdominal, catheter, without serialography	32.0
75625	Aortography, abdominal, translumbar, by serialography; supervision and interpretation only	15.2
75626	complete procedure	40.0
75627	Aortography, abdominal, catheter, by serialography; supervision and interpretation only	17.0
75628	complete procedure	48.0
75630	Aortography, abdominal plus bilateral ileofemoral lower extremity, catheter, by serialography; supervision and interpretation only	BR
75631	complete procedure	BR
75650	Angiography, cervicocerebral, catheter, including vessel origin; supervision and interpretation only	17.2
75651	complete procedure	40.0
75652	Angiography, cervicocerebral, selective catheter, including vessel origin; one vessel, supervision and interpretation only	12.6
75653	one vessel, complete procedure	36.0
75654	two vessels, supervision and interpretation only	13.3
75655	two vessels, complete procedure	38.0
75656	three or four vessels, supervision and interpretation only	17.2
75657	three or four vessels, complete procedure	40.0
75658	Angiography, brachial, retrograde; supervision and interpretation only	17.2
75659	complete procedure	40.0
75660	Angiography, carotid, cerebral, unilateral, selective external; supervision and interpretation only	17.2
75661	complete procedure	40.0
75662	Angiography, carotid, cerebral, bilateral, selective external; supervision and interpretation only	21.5
75663	complete procedure	50.0
75665	Angiography, carotid, cerebral, unilateral; supervision and interpretation only	17.2
75667	direct puncture, complete procedure	40.0
75669	catheter, complete procedure	46.0
75671	Angiography, carotid, cerebral, bilateral; supervision and interpretation only	21.5
75672	direct puncture, complete procedure	50.0
75673	catheter, complete procedure	54.0
75676	Angiography, carotid, cervical, unilateral; supervision and interpretation only	17.2
75677	direct puncture, complete procedure	40.0
75678	catheter, complete procedure	46.0
75680	Angiography, carotid, cervical, bilateral; supervision and interpretation only	21.5
75681	direct puncture, complete procedure	50.0
75682	catheter, complete procedure	54.0
75685	Angiography, vertebral; supervision and interpretation only	17.2
75686	direct puncture, complete procedure	40.0
75687	catheter, complete procedure	46.0
75690	Angiography, vertebral, cervical, unilateral; supervision and interpretation only	17.2
75691	direct puncture, complete procedure	40.0
75692	catheter, complete procedure	46.0
75695	Angiography, vertebral, cervical, bilateral; supervision and interpretation only	21.5
75696	direct puncture, complete procedure	50.0
75697	catheter, complete procedure	54.0
75705	Angiography, spinal, selective; supervision and interpretation only	9.8
75706	complete procedure	28.0
75710	Angiography, extremity, unilateral, supervision and interpretation only	10.5
75711	without serialography, complete procedure	30.0
75712	by serialography, complete procedure	32.0
75716	Angiography, extremity, bilateral; supervision and interpretation only	11.2
75717	without serialography, complete procedure	32.0
75718	by serialography, complete procedure	34.0
75722	Angiography, renal, unilateral, selective (including flush aortogram); supervision and interpretation only	17.2
75723	complete procedure	40.0
75724	Angiography, renal, bilateral, selective (including flush aortogram); supervision and interpretation only	25.8
75725	complete procedure	60.0
75726	Angiography, visceral; selective or supraselective, supervision and interpretation only	19.7
75727	selective (including flush aortogram), complete procedure	46.0
75728	supraselective, complete procedure	48.0
	(For selective angiography, additional visceral vessels studied after basic examination, see 75772, 75773)	
75731	Angiography, adrenal, unilateral, selective; supervision and interpretation only	19.7
75732	complete procedure	46.0

		Unit Value
75733	Angiography, adrenal, bilateral, selective; supervision and interpretation only	20.6
75734	complete procedure	48.0
75736	Angiography, pelvic; selective or supraselective, supervision and interpretation only	18.9
75737	selective, complete procedure	44.0
75738	supraselective, complete procedure	46.0
75741	Angiography, pulmonary, unilateral, selective; supervision and interpretation only	10.5
75742	complete procedure	30.0
75743	Angiography, pulmonary, bilateral, selective; supervision and interpretation only	21.5
75744	complete procedure	50.0
75746	Angiography, pulmonary; by nonselective catheter or venous injection, supervision and interpretation only	10.5
75747	catheter, nonselective, complete procedure	30.0
75748	venous injection, complete procedure	40.0
75750	Angiography, coronary, root injection; supervision and interpretation only	25.8
75751	complete procedure	60.0
75752	Angiography, coronary, unilateral selective injection, including left ventricular and supravalvular angiogram and pressure recording; supervision and interpretation only	30.1
75753	complete procedure	70.0
75754	Angiography, coronary, bilateral selective injection, including left ventricular and supravalvular angiogram and pressure recording; supervision and interpretation only	34.4
75755	complete procedure	80.0
75756	Angiography, internal mammary; supervision and interpretation only	15.2
75757	complete procedure	40.0
75762	Angiography, coronary bypass, unilateral selective injection; supervision and interpretation only	BR
75764	complete procedure	BR
75766	Angiography, coronary bypass, multiple selective injection; supervision and interpretation only	BR
75767	complete procedure	BR
75772	Angiography, visceral, selective, additional vessels studied after basic examination; supervision and interpretation only	BR
75773	complete procedure	BR

VEINS AND LYMPHATICS

(For injection procedure only for venous system, see 36400–36510)

(For injection procedure only for lymphatic system, see 38790–38794)

75801	Lymphangiography, extremity only, unilateral; supervision and interpretation only	9.6
75802	complete procedure	25.0
75803	Lymphangiography, extremity only, bilateral; supervision and interpretation only	12.0
75804	complete procedure	35.0
75805	Lymphangiography, pelvic/abdominal, unilateral; supervision and interpretation only	12.0
75806	complete procedure	35.0
75807	Lymphangiography, pelvic/abdominal, bilateral; supervision and interpretation only	12.0
75808	complete procedure	35.0
75810	Splenoportography; supervision and interpretation only	15.2
75811	complete procedure	40.0

(For injection procedure for splenoportography, see 38200)

75820	Venography, extremity, unilateral supervision and interpretation only	8.0
75821	complete procedure	16.0
75822	Venography, extremity, bilateral; supervision and interpretation only	10.0
75823	complete procedure	26.0
75825	caval, inferior or superior, with serialography	16.0
75826	complete procedure	32.0
75827	Venography, caval, superior, with serialography; supervision and interpretation only	12.0
75828	complete procedure	35.0
75831	Venography, renal, unilateral, selective; supervision and interpretation only	15.2
75832	complete procedure	40.0
75833	Venography, renal, bilateral, selective; supervision and interpretation only	19.5
75834	complete procedure	45.0
75840	Venography, adrenal, unilateral, selective; supervision and interpretation only	10.8
75841	complete procedure	30.0
75842	Venography, adrenal, bilateral, selective; supervision and interpretation only	12.2
75843	complete procedure	32.0
75845	Venography, azygos; selective or nonselective, supervision and interpretation only	10.6
75846	selective, complete procedure	30.0
75847	nonselective, complete procedure	28.0
75850	Venography, intraosseous; supervision and interpretation only	12.2
75851	complete procedure	32.0
75860	Venography, sinus or jugular, catheter; supervision and interpretation only	12.2
75861	complete procedure	32.0
75870	Venography, superior sagittal sinus; supervision and interpretation only	12.2
75871	complete procedure, including direct puncture	32.0
75872	Venography, epidural; supervision and interpretation only	BR
75873	complete procedure	BR
75880	Venography, orbital; supervision and interpretation only	13.7
75881	complete procedure	36.0
75885	Percutaneous transhepatic portography with hemodynamic evaluation; supervision and interpretation only	13.7
75886	complete procedure	36.0
75887	Percutaneous transhepatic portography without hemodynamic evaluation; supervision and interpretation only	12.9
75888	complete procedure	34.0
75889	Hepatic venography wedged or free, with hemodynamic evaluation; supervision and interpretation only	14.4
75890	complete procedure	38.0
75891	Hepatic venography, wedged or free, without hemodynamic evaluation; supervision and interpretation only	12.9
75892	complete procedure	34.0
75893	Venous sampling thru catheter without angiography (e.g., for parathyroid hormone, renin)	5.0

		Unit Value
	TRANSCATHETER THERAPY AND BIOPSY	
75894	Transcatheter therapy, embolization, including angiography; supervision and interpretation only	15.2
75895	complete procedure	40.0
75896	Transcatheter therapy, infusion, including angiography; supervision and interpretation only	15.9
75897	complete procedure	42.0
75898	Angiogram through existing catheter for follow-up study for transcatheter therapy, embolization or infusion	10.0
75950	Transcatheter intravascular occlusion, temporary, including angiography; supervision and interpretation only	BR
75951	complete procedure	BR
75955	Transcatheter intravascular occlusion, permanent, including angiography; supervision and interpretation only	BR
75956	complete procedure	BR
75961	Transcatheter retrieval, percutaneous, of fractured venous or arterial catheter	BR
75970	Transcatheter biopsy; supervision and interpretation only	BR
75971	complete procedure	BR
	(For transcatheter renal and ureteral biopsy, see 52007)	
	(For percutaneous needle biopsy of pancreas, see 48102; of retroperitoneal lymph node or mass, see 49180)	
75972	Percutaneous transluminal angioplasty, unilateral; supervision and interpretation only	BR
75973	complete procedure	BR
75974	Percutaneous transluminal angioplasty, bilateral; single catheter, supervision and interpretation only	BR
75975	complete procedure	BR
75976	Percutaneous transluminal angioplasty, bilateral, dual catheters; supervision and interpretation only	BR
75977	complete procedure	BR
	(For injection procedure only for percutaneous transluminal angioplasty, see 36100-36299)	
	(For percutaneous transluminal coronary angioplasty, see 93570)	
75980	Percutaneous transhepatic biliary drainage with monitoring; supervision and interpretation only	BR
75981	complete procedure	BR
75982	Percutaneous placement of drainage catheter for combined internal and external biliary drainage or of a drainage stent for internal biliary drainage in patients with an inoperable mechanical biliary obstruction; supervision and interpretation only	BR
75983	complete procedure	BR
	(For injection procedure only for percutaneous biliary drainage, see 47510)	
75984	Change of percutaneous drainage catheter with contrast monitoring (i.e., biliary tract, urinary tract); supervision and interpretation only	BR
75985	complete procedure	BR
	(For injection procedure only for percutaneous biliary drainage, see 47510)	
	(For percutaneous nephrostolithotomy or pyelostolithotomy, see 50080, 50081)	
75990	Drainage of abscess, percutaneous, with radiologic guidance (i.e., fluoroscopy, ultrasound, or computed tomography), with or without placement of indwelling catheter	BR
	(75990 is neither organ nor area specific. For drainage of abscess performed without radiology or fluoroscopy, see under specific anatomic site)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-065, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-065, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-065, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-065, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-065, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-065, filed 1/30/74; Order 68-7, § 296-23-065, filed 11/27/68, effective 1/1/69.]

WAC 296-23-079 Miscellaneous.

		Unit Value
	(For arthrography of shoulder, see 73040, 73041; elbow, see 73085, 73086; wrist, see 73115, 73116; hip, see 73525, 73526; knee, see 73580, 73581; ankle, see 73615, 73616)	
76000	Fluoroscopy (separate procedure, other than 71023 or 71034)	3.0
76010	Radiologic examination from nose to rectum for foreign body, single film, child	BR
76020	Bone age studies	6.0
76040	Bone length studies (orthoroentgenogram, scanogram)	10.0
76061	Radiological examination, osseous survey; limited (e.g., for metastases)	15.2
76062	complete (axial and appendicular skeleton)	BR
76065	osseous survey, infant	13.2
76066	Joint survey, single view, one or more joints (specify)	BR
76080	Fistula or sinus tract study supervision and interpretation only	4.8
76081	complete procedure	12.0
76086	Mammary ductogram or galactogram, unilateral; supervision and interpretation only	6.3
76087	complete procedure	15.8
76088	Mammary ductogram or galactogram, bilateral; supervision and interpretation only	10.6
76089	complete procedure	26.5
	(For injection procedure only for mammary ductogram or galactogram, see 19030)	
76090	Mammography, unilateral	8.8
76091	bilateral	13.2
	(For xeromammography, list 76150 in addition to code for mammography)	
76096	Radiologic examination, localization of breast nodule or calcification before	

		Unit Value
	operation, with marker and confirmation of its position with appropriate imaging	14.6
76100	Laminography (tomography, planigraphy, body section radiography) (independent procedure)	13.2
76101	Radiologic examination, complex motion (i.e., hypercycloidal) body section (e.g., mastoid polytomography), other than kidney; unilateral	19.3
76102	bilateral	35.0
	(For nephrotomography, see 74415)	
76105	to complement routine examination	7.0
76120	Cineradiography (independent procedure)	13.2
76125	to complement routine examination	7.0
	(76127 has been deleted. The use of photographic media is not reported separately but is considered to be a component of the basic procedure)	
76130	Radiologic examination; at bedside or in operating room, not otherwise specified	2.7
76135	in home	BR
76137	after regular hours	BR
76140	Written consultation on x-ray examination made elsewhere	BR
76150	Xeroradiography	6.0
	(76300 has been deleted. For thermography of the breast, use 76499)	
76350	Subtraction in conjunction with contrast studies	BR
76360	Computerized tomography guidance for needle biopsy; supervision and interpretation only	BR
76361	complete procedure	BR
76365	Computerized tomography guidance for cyst aspiration; supervision and interpretation only	BR
76366	complete procedure	BR
76370	Computerized tomography guidance for placement of radiation therapy fields	BR
76375	Computerized tomography, coronal, sagittal, and/or oblique reconstruction	23.5
76400	Magnetic resonance (e.g., proton) imaging, bone marrow blood supply	BR
76499	Unlisted diagnostic radiologic procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-079, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-079, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-079, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-079, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-079, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-079, filed 1/30/74.]

WAC 296-23-07901 Diagnostic ultrasound.

Notes:

A-mode: Implies a one-dimensional ultrasonic measurement procedure.

M-mode: Implies a one-dimensional ultrasonic measurement procedure with movement of the trace to record amplitude and velocity of moving echo-producing structures.

B-scan: Implies a two-dimensional ultrasonic scanning procedure with a two-dimensional display.

Real-time scan: Implies a two-dimensional ultrasonic scanning procedure with display of both two-dimensional structure and motion with time.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07901, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07901, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07902 Head and neck.

		Unit Value
76500	Echoencephalography, A-mode, diencephalic midline,	7.7
	(76505 has been deleted. To report complete A-mode echoencephalography, use 76999)	
76506	Echoencephalography, B-mode (gray scale) complete (for determination of ventricular size, delineation of cerebral contents and detection of fluid, masses or other intracranial abnormalities), including A-mode encephalography as secondary component where indicated	BR
76511	Ophthalmic, ultrasound, echography; spectral analysis with amplitude quantitation, A-mode	22.9
76512	contact scan B-mode	22.9
76515	tomography, with or without A or M-mode	57.2
76516	Ophthalmic biometry by ultrasound echography; A-mode	15.4
76517	scan B-mode	28.6
76529	Ophthalmic ultrasound foreign body localization	BR
	(76530 has been deleted. To report A-mode echography of thyroid, use 76999)	
76535	Echography, thyroid, B-scan and/or real time with image documentation	11.4
	(76550, carotid imaging has been deleted. To report, use 93870)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-07902, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07902, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07902, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07902, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07903 Heart.

		Unit Value
76601	Echography, chest; A–mode	9.7
76604	B–scan (includes mediastinum)	11.4
76620	Echocardiography, M–mode, complete	15.4
76625	limited, e.g., follow–up or limited study	7.7
76627	Echocardiography, real–time scan; complete	11.4
76628	limited	9.7
76629	Echocardiography M–mode and real time with image documentation	BR
76632	Doppler echocardiography	
	(Procedure 76632 is often performed in combination with M–mode or 2–dimensional echocardiography)	
	(For echocardiography as a cardiovascular procedure, see 93300–93320)	
	(76640 has been deleted. To report A–mode echography of the breast, use 76999)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–07903, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–23–07903, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–07903, filed 12/23/80, effective 3/1/81; Order 75–39, § 296–23–07903, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07904 Thorax.

		Unit Value
76645	Echography, breast, B–scan and/or real time with image documentation	19.2

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–07904, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–07904, filed 12/23/80, effective 3/1/81; Order 75–39, § 296–23–07904, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07905 Abdomen and retroperitoneum.

		Unit Value
76700	Echography, scan B–mode, abdominal, complete	22.9
76705	limited, (e.g., follow–up or limited study)	15.4
76770	Echography, scan B–mode, retroperitoneal (e.g., renal, aorta, nodes), complete	22.9
76775	limited	19.2

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–07905, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–07905, filed 12/23/80, effective 3/1/81; Order 75–39, § 296–23–07905, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07906 Obstetrics, gynecology and pelvis.

		Unit Value
76805	Echography, pelvic scan B–mode, (e.g., obstetrics, gynecology, or transplants); complete	21.2
76815	fetal growth rate only	9.7
76855	Echography, pelvic area (Doppler)	11.4
76856	Echography, pelvic, real time	BR
	GENITALIA	
76870	Echography, scrotum and contents	BR
	EXTREMITIES	
76880	Echography, extremity, B–scan and/or real time with image documentation	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–07906, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–23–07906, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–07906, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–07906, filed 12/23/80, effective 3/1/81; Order 75–39, § 296–23–07906, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07907 Vascular studies.

		Unit Value
	(Doppler peripheral flow studies, 76900–76920 have been deleted. To report, see 93850–93950)	
76925	Peripheral imaging, B–scan, Doppler or real–time scan	BR
76930	Pericardiocentesis; supervision and interpretation	BR
76931	complete procedure	BR
	ULTRASONIC GUIDANCE PROCEDURES	
76934	Ultrasonic guidance for thoracentesis; supervision and interpretation only	3.0
76935	complete procedure	5.0
76938	Ultrasonic guidance for cyst or renal pelvis aspiration; supervision and interpretation only	1.0
76939	complete procedure	2.0
76942	Ultrasonic guidance for needle biopsy; supervision and interpretation only	4.0
76943	complete procedure	6.0

		Unit Value
76946	Ultrasonic guidance for amniocentesis; supervision and interpretation only	4.0
76947	complete procedure	6.0
76950	Echography for placement of radiation therapy fields, B-scan	17.1
76960	Ultrasonic guidance for placement of radiation therapy fields except for B-scan echography	14.3

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-07907, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-07907, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07907, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07907, filed 11/28/75, effective 1/1/76.]

WAC 296-23-07908 Miscellaneous.

		Unit Value
76970	Ultrasound study follow-up specify	10.0
76980	Ultrasound examination outside regular hours	8.6
76985	Ultrasound examination at bedside or in operating room	5.7
76990	Special ultrasonic display or imaging techniques (e.g., color)	
76999	Unlisted ultrasound examination (see guidelines)	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-07908, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-07908, filed 11/28/75, effective 1/1/76.]

THERAPEUTIC RADIOLOGY

WAC 296-23-080 Radiotherapy--General information and instructions. (1) Radiation therapy as listed in this section provides for teletherapy and brachytherapy to include initial consultation, clinical treatment planning, simulation, medical radiation physics, dosimetry, treatment devices, special services, and clinical treatment management procedures. They include normal follow-up care during course of treatment and for three months following its completion.

CONSULTATION: CLINICAL MANAGEMENT

Preliminary consultation, evaluation of patient prior to decision to treat, or full medical care (in addition to treatment management) when provided by the therapeutic radiologist may be identified by the appropriate procedure codes from medicine or surgery sections.

TREATMENT PLANNING PROCESS (EXTERNAL AND INTERNAL SOURCES)

(Procedures 77260, 77265, 77270, 77275 have been deleted. To report, use 77261-77263)

CLINICAL TREATMENT PLANNING (EXTERNAL AND INTERNAL SOURCES)

The clinical treatment planning process is a complex service including interpretation of special testing, tumor localization, treatment volume determination, treatment time/dosage determination, choice of treatment modality, determination of number and size of treatment ports, selection of appropriate treatment devices, and other procedures.

DEFINITIONS: Simple—planning requiring single treatment area of interest encompassed in a single port or simple parallel opposed ports with minimal blocking.

Intermediate—planning requiring three or more converging ports, two separate treatment areas, special blocking standard wedges, or special time dose constraints.

Complex—planning requiring highly complex blocking, tangential ports, special wedges or compensators, three or more separate treatment areas, special beam considerations.

		Unit Value
77261	Therapeutic radiology treatment planning; simple	BR
77262	intermediate	BR
77263	complex	BR
77280	Radiation therapy simulator aided field setting; simple	BR
77285	intermediate	BR
77290	complex	BR
77299	Unlisted procedure, therapeutic radiology clinical treatment planning.	BR

MEDICAL RADIATION PHYSICS, DOSIMETRY, TREATMENT DEVICES AND SPECIAL SERVICES

77300	Basic radiation dosimetry calculation, central axis depth dose, TDF, NSD, gap calculation, off axis factor, tissue inhomogeneity factors, as required during course of treatment	4.0
77305	Teletherapy, isodose plan (whether hand or computer calculated); simple (one or two parallel opposed unmodified ports directed to a single area of interest)	3.0
77310	intermediate (three or more treatment ports directed to a single area of interest)	4.0
77315	complex (mantle or inverted Y, tangential ports, the use of wedges, compensators, complex blocking or special beam considerations)	6.0

(Procedures 77320, 77325, 77330, 77335, 77340 have been deleted. To report, use 77300-77399 as appropriate)

		Unit Value
77321	Special teletherapy port plan, particles, hemi–body, total body	BR
77326	Brachytherapy isodose calculation; simple (calculation made from single plane, one to four source/ribbon application)	BR

(For definition of source/ribbon, see page 316B)

77327	intermediate (multiplane dosage calculations, application involving five to ten sources/ribbons)	BR
77328	complex (multiplane isodose plan, volume implant calculations, over ten sources/ribbons used, special spatial reconstruction)	BR
77331	Special dosimetry (e.g., TLD, microdosimetry) (specify)	BR
77332	Treatment devices, design and construction; simple (simple block, simple bolus)	BR
77333	intermediate (multiple blocks, stents, bite blocks, special bolus)	BR
77334	complex (irregular blocks, special shields, compensators, wedges, molds or casts)	BR
77336	Continuing medical radiation physics consultation in support of therapeutic radiologist, including continuing quality assurance	BR

(Procedures 77345–77360 have been deleted. To report, use 77300–77399 as appropriate)

77370	Special medical radiation physics consultation	BR
77399	Unlisted procedure, medical radiation physics, dosimetry and treatment devices	BR

CLINICAL TREATMENT MANAGEMENT

Except where specified, assumes treatment on a daily basis (4 or 5 fractions per week) with the use of megavoltage photon or high energy particle sources. Daily and weekly clinical treatment management are mutually exclusive for the same dates.

DEFINITIONS: Simple—single treatment area, single port or parallel opposed ports, simple blocks.

Intermediate—two separate treatment areas, three or more ports on a single treatment area, use of special blocks.

Complex—three or more separate treatment areas, highly complex blocking (mantle, inverted Y, tangential ports, wedges, compensators, or other special beam considerations).

		Unit Value
77400	Daily megavoltage treatment management; simple	2.0
77405	intermediate	3.0
77410	complex	4.0
77415	Therapeutic radiology treatment port film interpretation and verification, per treatment course	3.0
77420	Weekly megavoltage treatment management; simple	4.0
77425	intermediate	5.0
77430	complex	6.0

(Procedures 77435–77460 have been deleted. To report, use 77400–77499 as appropriate)

(For complicated shielding devices, see treatment aids, 77600–77635)

77465	Daily kilovoltage treatment management	2.0
77470	Special treatment procedure (e.g., total body irradiation, hemi–body irradiation, per oral, vaginal cone irradiation)	BR

(77470 assumes that the procedure be performed one or more times during the course of therapy, in addition to daily or weekly patient management)

77499	Unlisted procedure, therapeutic radiology clinical treatment management	BR

CLINICAL BRACHYTHERAPY

Clinical brachytherapy requires the use of either natural or man–made radioelements applied into or around a treatment field of interest. The supervision of radioelements and dose interpretation are performed solely by the the therapeutic radiologist. When a procedure requires the service of a surgeon in addition, the modifier '–66' or '–80' may be used (see modifiers in radiology guidelines, page 290). Services 77750–77799 include admission to the hospital and daily visits.

DEFINITIONS: (Sources refer to intracavitary placement or permanent interstitial placement; ribbons refer to temporary interstitial placement)

Simple—application with one to four sources/ribbons

Intermediate—application with five to ten sources/ribbons

Complex—application with greater than ten sources/ribbons

(Procedures 77600–77699 have been deleted. To report, use 77332–77334 or 77399 as appropriate)

(Procedures 77700–77749 have been deleted. To report, use 77300–77399 as appropriate)

		Unit Value
RADIUM AND RADIOISOTOPE THERAPY		
	(Professional service component only)	
77750	Infusion or instillation of radioelement solution of radioactive materials for therapy (includes handling and loading)	5.0
	(Procedures 77755–77785 have been deleted. To report, use 77761–77799 as appropriate)	
77761	Intracavitary radioelement application; simple	BR
77762	intermediate	BR
77763	complex	BR
77776	Interstitial radioelement application; simple	BR
77777	intermediate	BR
77778	complex	BR
77789	Surface application of radioelement	9.9
77790	Supervision, handling, loading of radioelement	13.4
77799	Unlisted procedure, clinical brachytherapy	BR
	(Procedure 77800 has been deleted. To report, use 77331)	
	(Procedures 77805–77810 have been deleted. To report, use 77305–77321 or 77326–77328 as appropriate)	
	(Procedure 77850 has been deleted. To report, use 77300, 77336 or 77370)	
	(Procedure 77860 has been deleted. To report, use 77336)	
	(Procedure 77999 has been deleted. To report, use 77399)	

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–23–080, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–080, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–080, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–080, filed 1/30/74; Order 68–7, § 296–23–080, filed 11/27/68, effective 1/1/69.]

WAC 296–23–115 Special adjunctive services.

(For hyperbaric pressurization, see 96200, 96201)

(For chemotherapy of malignant disease, see 96030–96050)

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83–16–066 (Order 83–23), § 296–23–115, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–115, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–115, filed 1/30/74.]

NUCLEAR MEDICINE

WAC 296–23–120 Nuclear medicine—General information and instructions. (1) The listed procedures may be performed independently or in the course of the overall medical care of the patient. If the physician providing these nuclear medicine services is also responsible for the preliminary diagnostic work–up and/or follow–up care of the patient, see appropriate sections also.

The services listed do not include the provision of radium or other radioelements. Those materials supplied by the physician should be listed separately and identified by the code 78990 for diagnostic radionuclide(s) and 79900 for therapeutic radionuclide.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–120, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–120, filed 1/30/74.]

WAC 296–23–125 Diagnostic.

		Unit Value
ENDOCRINE SYSTEM		
78000	Thyroid uptake, single determination	6.0
78001	multiple determinations (as 6 and 24 hours, etc.)	8.0
78003	Thyroid stimulation, suppression or discharge (not including initial uptake studies)	9.0
78006	Thyroid imaging, with uptake; single determination	16.0
78007	multiple determinations	18.0
78010	Thyroid imaging only	10.0
78011	with vascular flow	BR
78015	Thyroid carcinoma metastases imaging; limited area (e.g., neck and chest only)	20.0
78016	with additional studies (e.g., urinary recovery, etc.)	25.0
78017	multiple areas	BR
78018	whole body	BR
	(For triiodothyronine true (TT–3), RIA, see 84480)	
	(For triiodothyronine, free (FT–3), RIA (unbound T–3 only), see 84481)	
	(For T–4 thyroxine, CPB or resin uptake, see 84435)	
	(For TT–4 thyroxine, RIA, see 84436)	
	(For T–4 thyroxine, neonatal, see 84437)	
	(For FT–4 thyroxine, free, RIA (unbound T–4 only), see 84439)	
	(For calcitonin, RIA, see 82308)	
	(78070 has been deleted. To report parathyroid imaging, use 78099)	

		Unit Value
78075	Adrenal imaging	BR
	(For adrenal cortex antibodies, RIA, see 86681)	
	(For cortisol, RIA, plasma, see 82533)	
	(For cortisol, RIA, urine, see 82534)	
	(For aldosterone, double isotope technique, see 82087)	
	(For aldosterone, RIA, blood, see 82088)	
	(For aldosterone, RIA, urine, see 82089)	
	(For 17–ketosteroids, RIA, see 83588)	
	(For 17–OH ketosteroids, RIA, see 83599)	
	(For 17–hydroxycorticosteroids, RIA, see 83491)	
	(For insulin, RIA, see 83525)	
	(For insulin antibodies, RIA, see 86337)	
	(For insulin factor antibodies, RIA, see 86338)	
	(For proinsulin, RIA, see 84206)	
	(For glucagon, RIA, see 82943)	
	(For adrenocorticotrophic hormone (ACTH), RIA, see 82024)	
	(For human growth hormone (HGH), (somatotropin), RIA, see 83003)	
	(For human growth hormone antibody, RIA, see 86277)	
	(For thyroglobulin antibody, RIA, see 86800)	
	(For thyroid microsomal antibody, RIA, see 86376)	
	(For thyroid stimulating hormone (TSH), RIA, see 84443)	
	(For thyrotropin releasing factor, RIA, see 84444)	
	(For plus long–acting thyroid stimulator (LATS), see 84445)	
	(For follicle stimulating hormone (FSH component of pituitary gonadotropin), RIA, see 83001)	
	(For luteinizing hormone (LH component of pituitary gonadotropin), (ICSH), RIA, see 83002)	
	(For luteinizing releasing factor (LRH), RIA, see 83727)	
	(For prolactin level (mammotropin), RIA, see 84146)	
	(For oxytocin level, (oxytocinase), RIA, see 83949)	
	(For vasopressin level (antidiuretic hormone), RIA, see 84588)	
	(For estradiol, RIA, see 82670)	
	(For progesterone, RIA, see 84144)	
	(For testosterone, blood, RIA, see 84403)	
	(For testosterone, urine, RIA, see 84405)	
	(For etiocholanolone, RIA, see 82696)	
	(For chemical analysis, RIA tests, see WAC 296–23–212, chemistry and toxicology)	
78099	Unlisted endocrine procedure, diagnostic nuclear medicine	BR
	(For chemical analysis, RIA tests, see Chemistry and Toxicology section)	

HEMATOPOIETIC, RETICULOENDOTHELIAL AND LYMPHATIC SYSTEM

78102	Bone marrow imaging; limited area	BR
78103	multiple areas	BR
78104	whole body	BR
78110	Blood or plasma volume, radioisotope technique; single sampling	8.0
78111	multiple sampling	BR+
	(For dye method, see 84605, 84610)	
78120	Red cell mass determination, single sampling	12.0
78121	multiple sampling	BR+
78130	Red cell survival study (e.g., radiochromium)	20.0
78135	plus splenic and/or hepatic sequestration	30.0
78140	Red cell splenic and/or hepatic sequestration	20.0
78160	Plasma radio–iron turnover rate ...	16.0
78162	Radio–iron oral absorption	BR
78170	Radio–iron red cell utilization	24.0

		Unit Value
	(78180 has been deleted. To report radioiron body distribution and storage pools, use 78199)	
	(For hemosiderin, RIA, see 83071)	
	(For intrinsic factor antibodies, RIA, see 86340)	
	(For cyanocobalamin (vitamin B–12), RIA, see 82607)	
	(For folic acid (folate) serum, RIA, see 82746)	
	(For human hepatitis antigen, nepatitis associated agent (Australian antigen) (HAA), RIA, see 86287)	
	(For hepatitis A antibody (HAAb), RIA, see 86296)	
	(For hepatitis A virus antibody (HAVAb), see 86297)	
	(For hepatitis B core antigen (HB_cAg), RIA, see 86288)	
	(For hepatitis B core antibody (HB_cAb), RIA, see 86289)	
	(For hepatitis B surface antigen (HB_sAb), RIA, see 86287)	
	(For hepatitis B surface antibody (HB_sAb), RIA, see 86291)	
	(For hepatitis Be antigen (HB_eAg), RIA, see 86293)	
	(For hepatitis Be antibody (HB_eAb), RIA, see 86295)	
78185	Spleen imaging only; static	20.0
	(If combined with liver study, use procedures 78215 and 78216)	
78186	with vascular flow	25.0
78191	Platelet survival	BR
78195	Lymphatics and lymph glands imaging	BR
78199	Unlisted hematopoietic, R–E and lymphatic procedure, diagnostic nuclear medicine	BR
	(For chemical analysis, RIA tests, see WAC 296–23–212, chemistry and toxicology)	

GASTROINTESTINAL SYSTEM

78201	Liver imaging; static	20.0
78202	with vascular flow	25.0
	(For spleen imaging only, use 78185 and 78186)	
78215	Liver and spleen imaging; static	25.0
78216	with vascular flow of liver and/or spleen	30.0
78220	Liver function study with hepatobiliary agents; with serial images	20.0
	(78221 has been deleted. To report liver function study with probe technique, use 78299)	
78223	Hepatobiliary ductal system imaging, including gallbladder	BR
78225	Liver–lung study, imaging (e.g., subphrenic abscess)	BR
78230	Salivary gland imaging; static	14.0
78231	with serial views	16.0
78232	Salivary gland function study	BR
	(78240 has been deleted. To report pancreas imaging, use 78299)	
78261	Gastric mucosa imaging	BR
78262	Gastroesophageal reflux study	BR
78264	Gastric emptying study	BR
78270	Vitamin B–12 absorption studies (e.g., Schilling test); without intrinsic factor	10.0
78271	with intrinsic factor	20.0
78272	Vitamin B–12 absorption studies combined, with and without intrinsic factor	25.0
78276	Gastrointestinal aspirate blood loss localization	BR
78278	Acute gastrointestinal blood loss imaging	BR
78280	Gastrointestinal blood loss study	16.0
78282	Gastrointestinal protein loss (e.g., radiochromium albumin)	12.0
	(78285, 78286 have been deleted. To report gastrointestinal fat or fatty acid absorption studies, use 78299)	
	(For gastrin, RIA, see 82941)	
	(For intrinsic factor level, see 83528)	
	(For carcinoembryonic antigen level (CEA), RIA, see 86151)	
78290	Bowel imaging (e.g., ectopic gastric mucosa, Meckel's localization, volvulus)	20.0
78291	Peritoneal–venous shunt patency test (e.g., for LeVeen shunt)	BR
78299	Unlisted gastrointestinal procedure, diagnostic nuclear medicine	BR
	(For chemical analysis, RIA tests, see WAC 296–23–212, chemistry and toxicology)	

		Unit Value
MUSCULOSKELETAL SYSTEM		
	(Bone and joint imaging can be used in the diagnosis of a variety of infectious inflammatory diseases, e.g., osteomyelitis, as well as for localization of primary and/or metastatic neoplasms)	
	(For positron method or other complex instrumentation, see WAC 296-20-010, Item 10)	
78300	Bone, imaging limited area (e.g., spine, pelvis, or skull, etc.)	25.0
78305	multiple areas	40.0
78306	whole body	48.2
78310	vascular flow only	BR
78380	Joint imaging; limited area	BR
78381	multiple areas	BR
78399	Unlisted musculoskeletal procedure, diagnostic nuclear medicine	BR
CARDIOVASCULAR SYSTEM		
	(78401 has been deleted. To report, see 78402-78415)	
78402	Cardiac blood pool imaging with vascular flow assessment (sequential imaging with or without time activity curve evaluation)	25.0
78403	Cardiac blood pool imaging by gated equilibrium blood pool techniques with determination of global or regional ventricular function (specify right, left, or both) including but not necessarily limited to ejection fraction and wall motion, at rest;	BR
78404	with exercise and/or pharmacologic intervention, including but not necessarily limited to continuous vital signs and ECG monitoring, and treadmill or bicycle exercise for cardiovascular stress at submaximal or maximal levels	
78407	with determination of ventricular volume (specify right, left, or both)	BR
	(78409 has been deleted. To report, use 78403)	
78411	Cardiac blood pool imaging by first pass technique, with determination of global or regional ventricular function (specify right, left, or both) including but not necessarily limited to ejection fraction and wall motion, at rest;	BR
78412	with exercise and/or pharmacologic intervention, including but not necessarily limited to continuous vital signs and ECG monitoring, and treadmill or bicycle exercise for cardiovascular stress at submaximal or maximal levels	BR
	(78413 has been deleted. To report, use 78411)	
	(78405, 78406 Myocardium imaging has been deleted. To report, use 78418-78424)	
78414	Determination of ventricular ejection fraction with probe technique	BR
78415	Cardiac blood pool imaging, functional imaging (e.g., phase and amplitude analysis)	
78418	Myocardium imaging; regional myocardial perfusion at rest	BR
78419	regional myocardial perfusion at rest and with exercise and/or pharmacologic intervention, including but not necessarily limited to continuous vital signs and ECG monitoring, and treadmill or bicycle exercise for cardiovascular stress at submaximal or maximal levels	
78420	with quantitative evaluation (e.g., pharmacokinetic temporal assessment)	
78422	for evaluation of infarction (infarct avid imaging)	BR
78424	regional myocardial perfusion (redistribution resting or postexercise study)	BR
78425	Regurgitant index	BR
78428	Cardiac shunt detection	BR
78435	Cardiac flow study, imaging (i.e., angiocardiography)	BR
78445	Vascular flow study, imaging (i.e., angiography, venography)	BR
78455	Venous thrombosis study (e.g., radioactive fibrinogen)	BR
78457	Venous thrombosis imaging (e.g., venogram); unilateral	BR
78458	bilateral	BR
78470	Cardiac output	BR
	(78490 has been deleted. To report tissue clearance studies, use 78499)	
	(For digoxin, RIA, see 82643)	
	(For digitoxin (digitalis), RIA, see 82640)	
78499	Unlisted cardiovascular procedure, diagnostic nuclear medicine	BR

		Unit Value
	(For chemical analysis, RIA tests, see WAC 296–23–212, chemistry and toxicology)	
	RESPIRATORY SYSTEM	
78580	Pulmonary perfusion imaging; particulate	26.0
78581	gaseous	BR
78582	gaseous, with ventilation, rebreathing and washout	BR
78584	Pulmonary perfusion imaging, particulate, with ventilation; single breath	BR
78585	rebreathing and washout, with or without single breath	1.6
78586	Pulmonary ventilation imaging, aerosol; single projection	BR
78587	multiple projections (e.g., anterior, posterior, lateral views)	BR
78591	Pulmonary ventilation imaging, gaseous, single breath, single projection	BR
78593	Pulmonary ventilation imaging, gaseous, with rebreathing and washout with or without single breath; single projection	22.0
78594	multiple projections (e.g., anterior, posterior, lateral views)	BR
78599	Unlisted respiratory procedure, diagnostic nuclear medicine	BR
	NERVOUS SYSTEM	
78600	Brain imaging, limited procedure; static	26.0
78601	with vascular flow	31.0
78605	Brain imaging, complete; static	30.0
78606	with vascular flow	35.0
78610	Brain imaging, vascular flow study only	10.0
78630	Cerebrospinal fluid flow, imaging; cisternography (not including introduction of material)	35.0
	(For injection procedure, see 61000–61070; 62270–62294)	
78635	ventriculography (not including introduction of material)	35.0
	(For injection procedure, see 61000–61070; 62270–62294)	
78640	myelography (not including introduction of material)	BR
	(For injection procedure, see 61000–61070; 62270–62294)	
78645	shunt evaluation	35.0
	(For injection procedure, see 61000–61070; 62270–62294)	
78650	CSF leakage	32.0
	(For injection procedure, see 61000–61070; 62270–62294)	
	(For myelin basic protein, CSF, RIA, see 83873)	
78655	Eye tumor identification with radiophosphorus	BR
78660	Dacryocystography (lacrimal flow study)	BR
78699	Unlisted nervous system procedure, diagnostic nuclear medicine	BR
	GENITOURINARY SYSTEM	
78700	Kidney imaging; static	18.0
78701	with vascular flow	20.0
78704	with function study (i.e., imaging renogram)	23.0
78707	with vascular flow and function study	30.0
	(For introduction of radioactive substance in association with renal endoscopy, see 50558, 50559, 50578)	
78715	Kidney vascular flow	BR
78720	Kidney function study (i.e., renogram)	15.0
78725	Kidney function study, clearance	BR
	(For renin (angiotensin I), RIA, see 84244)	
	(For angiotensin II, RIA, see 82163)	
	(For beta–2 microglobulin, RIA, see 82231, 82232)	
78727	Kidney transplant evaluation	BR
78730	Urinary bladder residual study	BR
	(For introduction of radioactive substance in association with cystotomy or cystostomy, see 51020; in association with cystourethroscopy, see 52250)	
78740	Ureteral reflux study (radionuclide voiding cystogram)	BR
	(For estradiol, RIA, see 82670)	
	(For estriol, RIA, see 82677, 84680)	
	(For progesterone, RIA, see 84144)	
	(For prostatic acid phosphatase, RIA, see 84066)	
78760	Testicular imaging	BR

		Unit Value
	(For testosterone, blood, RIA, see 84403)	
	(For testosterone, urine, RIA, see 84405)	
	(For introduction of radioactive substance in association with ureteral endoscopy, see 50958, 50959, 50978)	
	(78770, 78775 have been deleted. To report either placenta imaging or placenta localization, use 78799)	
	(For lactogen, placental (HPL) chorionic somatomammotropin, RIA, see 83632)	
	(For chorionic gonadotropin, RIA, see 82998)	
	(For chorionic gonadotropin beta subunit, RIA, see 84701)	
	(For pregnanediol, RIA, see 84135)	
	(For pregnantrial, RIA, see 84138)	
78799	Unlisted genitourinary procedure, diagnostic nuclear medicine	BR
	(For chemical analysis, RIA tests, see WAC 296-23-212 chemistry and toxicology)	
	MISCELLANEOUS STUDIES	
78800	Tumor localization (e.g., gallium, selenomethionine); limited area ...	BR
	(For specific organ, see appropriate heading)	
	(For eye tumor identification, see 78655)	
78801	multiple areas	BR
78802	whole body	BR
78805	Abscess localization; limited area ..	BR
78806	whole body	BR
	(For imaging bone infectious inflammatory disease, see 78300-78381)	
	(For Rast, see 86421, 86422)	
	(For gamma-E immunoglobulin, RIA, see 82785)	
	(For gamma-G immunoglobulin, see 82784)	
	(For alpha-1 antitrypsin, RIA, see 86064)	
	(For alpha-1 fetoprotein, RIA, see 86244)	
	(For antinuclear antibodies, RIA, see 86038)	
	(For lactic dehydrogenase, RIA, see 83610)	
	(For amikacin, see 82112)	
	(For aminophylline, see 82137)	
	(For amitriptyline, see 82138)	
	(For amphetamine, chemical, quantitative, see 82145)	
	(For chlordiazepoxide, see 82420, 82425)	
	(For chlorpromazine, see phenothiazine, urine, 84021, 84022)	
	(For clonazepam, see 82510)	
	(For cocaine, quantitative, see 82520)	
	(For diazepam, see 82636)	
	(For dihydromorphinone, quantitative, see 82649)	
	(For phenytoin (diphenylhydantoin), see 84045)	
	(For flucytosine, see 82741)	
	(For gentamicin, see 84695)	
	(For glutethimide, see 82980)	
	(For lysergic acid diathylamide (LSD), RIA, see 83728)	
	(For morphine (heroin), RIA, see 83862)	
	(For phencyclidine (PCP), see 83992)	
	(For phenobarbital, see barbiturates, 82205, 82210)	
	(For tobramycin, see 84840)	
	(For kanamycin, see 83578)	
78890	Generation of automated data: Interactive process involving nuclear physician and/or allied health professional personnel; simple manipulations and interpretation, not to exceed 30 minutes	BR
78891	complex manipulations and interpretation, exceeding 30 minutes .	BR
	(use 78890 or 78891 in addition to primary procedure)	
78895	Bedside unit required	BR

		Unit Value
	(use 78895 in addition to primary procedure)	
78990	Provision of diagnostic radionuclide(s)	12.0
78999	Unlisted miscellaneous procedure, diagnostic nuclear medicine	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-125, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-125, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-125, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-125, filed 1/30/74. Formerly WAC 296-23-100.]

WAC 296-23-130 Therapeutic.

Preliminary and follow-up diagnostic tests not included. For these services, see appropriate sections.

The listed values do not include the cost of radioisotopes. Use 99070 to identify cost of isotopes.

(For procedures involving radioactive sealed sources and surface application of radioactive material, see radiation therapy)

		Unit Value
79000	Radionuclide therapy, hyperthyroidism, initial including evaluation of patient	48.0
79001	subsequent, each	20.0
79020	Radionuclide therapy, thyroid suppression, (euthyroid cardiac disease), incuding evaluation of patient	48.0
79030	Radionuclide ablation of gland for thyroid carcinoma	BR+
79035	Radionuclide therapy for metastases of thyroid carcinoma	BR
79100	Radionuclide therapy, polycythemia vera, chronic leukemia, etc., each treatment	16.0
79200	Intracavitary radioactive colloid therapy	24.0
79300	Interstitial radioactive colloid therapy	60.0
79400	Radionuclide therapy, nonthyroid, nonhematologic e.g., for metastases to bone	BR+
79420	Intravascular radionuclide therapy, particulate	BR
79440	Intra-articular radionuclide therapy	BR
79900	Provision of therapeutic radionuclide(s)	BR
79999	Unlisted radionuclide therapeutic procedure	BR

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-130, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-130, filed 1/30/74. Formerly WAC 296-23-095.]

PATHOLOGY

WAC 296-23-200 Pathology general information and instruction. Rules and billing procedure pertaining to all practitioners rendering service to injured workers are presented in general information section beginning with WAC 296-20-010. Some commonalities are repeated here for convenience of those doctors referring to pathology section. Definitions and rules to pathology are also included here.

(1) The following values apply only when these services are performed by or under the responsible supervision of a physician. Unless otherwise specified, the listed values include the collection and handling of the specimens by the laboratory performing the procedure.

(2) Lab reports must be attached to bills for lab services. See WAC 296-20-125 for further billing instruction.

(3) Laboratory procedures performed by other than the billing physician shall be billed at the value charged that physician by the reference (outside) laboratory under the individual procedure number or the panel procedure number listed under "PANEL OR PROFILE TESTS" (see modifier -90).

(4) The department or self-insurer may deny payment for lab procedures which are determined to be excessive or unnecessary for management of the injury or conditions.

(5) Panel (profile) tests: Panel (profile) tests are defined as certain multiple tests performed on a single specimen of blood or urine. They are distinguished from the single or multiple test(s) performed on an "individual," "immediate" or "stat" reporting basis. . denotes test performed as part of a panel, see 80003-80013.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-200, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-200, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-200, filed 1/30/74; Order 70-12, § 296-23-200, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-200, filed 11/27/68, effective 1/1/69.]

WAC 296-23-201 Unlisted service or procedure. A service or procedure may be provided that is not listed in this fee schedule. When reporting such a service, the appropriate "unlisted procedure" code may be used to indicate the service, identifying it by "special report" as discussed in WAC 296-23-20101 below. The "unlisted procedures" and accompanying codes for PATHOLOGY AND LABORATORY are as follows:

80099	Unlisted panel
81099	Unlisted urinalysis procedure
84999	Unlisted chemistry or toxicology procedure
85999	Unlisted hematology procedure
86999	Unlisted immunology procedure
87999	Unlisted microbiology procedure
88099	Unlisted necropsy (autopsy) procedure
88199	Unlisted cytopathology procedure

88299 Unlisted cytogenetic study
88399 Unlisted surgical pathology procedure
89399 Unlisted miscellaneous pathology test.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-201, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-201, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-201, filed 11/24/76, effective 1/1/77.]

WAC 296-23-20101 Special report. A service that is rarely provided, unusual, variable or new may require a special report in determining medical appropriateness of the service. Pertinent information should include an adequate definition or description of the nature, extent, and need for the procedure; and the time, effort, and equipment necessary to provide the service. Additional items which may be helpful might include: Complexity of symptoms, final diagnosis, pertinent physical findings, diagnostic and therapeutic procedures, concurrent problems, and followup care. For report requirements see WAC 296-20-01002.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-20101, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-20101, filed 11/24/76, effective 1/1/77.]

WAC 296-23-20102 Pathology modifier. MODIFIERS : Listed services and procedures may be modified under certain circumstances. When applicable, the modifying circumstance should be identified by the addition of the appropriate modifier code, which is a two digit number placed after the usual procedure number from which it is separated by a hyphen. If more than one modifier is used, the "multiple modifiers" code placed first after the procedure code indicates that one or more additional modifier codes will follow. All modifiers and their respective codes are listed in Appendix A. Modifiers commonly used in PATHOLOGY AND LABORATORY are as follows:

-22 UNUSUAL SERVICES: When the service(s) provided is greater than that usually required for the listed procedure, it may be identified by adding modifier '-22' to the usual procedure number. A report may also be appropriate..... BR

-26 PROFESSIONAL COMPONENT: Certain procedures (e.g., laboratory, radiology, electrocardiogram, specific diagnostic and therapeutic services) are a combination of a physician component and a technical component. When the professional component is reported separately, the service may be identified by adding the modifier '-26' to the usual procedure number.

-52 REDUCED SERVICES: Under certain circumstances a service or procedure is partially reduced or eliminated at the doctor's election. Under these circumstances the service provided can be identified by its usual procedure number and the addition of the modifier '-52', signifying that the service is reduced. This provides a means of reporting reduced services without disturbing the identification of the basic service.

-90 REFERENCE (OUTSIDE) LABORATORY: When laboratory procedures are performed by a party other than the treating or reporting doctor, the procedure may be identified by adding the modifier '-90' to the usual procedure number. The procedure shall be billed as charged to the ordering doctor..... BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-20102, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-20102, filed 12/23/80, effective 3/1/81.]

WAC 296-23-204 Panel or profile tests.

The following list contains those tests that can be and are frequently done as groups and combinations ("profiles") on automated multichannel equipment. For any combination of tests among those listed immediately below, use the appropriate number 80002-80019. Groups of the tests listed here are distinguished from multiple tests performed individually for immediate or "stat" reporting.

The following unit values apply when three or more of the tests listed below are performed on the same blood or urine specimen under the conditions described under item 6, page 188.

(For collection and handling of specimen, see 99000 and 99001)

Albumin
Albumin/globulin ratio
Bilirubin, direct
Bilirubin, total
Calcium
Carbon dioxide content
Chloride
Cholesterol
Creatinine
Globulin
Glucose (sugar)
Lactic dehydrogenase (LDH)
Phosphatase, acid
Phosphatase, alkaline
Phosphorus
Potassium
Protein, total

Sodium
Transaminase, glutamic, oxaloacetic (SGOT)
Transaminase, glutamic, pyruvic (SGPT)
Urea nitrogen (BUN)
Uric acid

		Unit Value
80002	Automated multichannel test; 1 or 2 clinical chemistry test(s)	21.0
80003	3 clinical chemistry tests	28.0
80004	4 tests	32.0
80005	5 tests	36.0
80006	6 tests	40.0
80007	7 tests	44.0
80008	8 tests	48.0
80009	9 tests	52.0
80010	10 tests	56.0
80011	11 tests	60.0
80012	12 tests	64.0
80016	13–16 clinical chemistry tests, per additional test	2.8
80018	17–18 clinical chemistry tests, per additional test	2.8
80019	19 or more clinical chemistry tests (indicate instrument used and number of tests performed), per additional test	2.8

THERAPEUTIC DRUG MONITORING

(e.g., antiepilepsy drugs, cardiac drugs, antibiotics, sedatives)

80031	Therapeutic quantitative drug monitoring in blood and/or urine; measurement one drug (if drug not specified by individual code number)	BR
80032	2 drugs measured	BR
80033	3 drugs measured	BR
80034	4 or more drugs measured	BR
80040	Serum radioimmunoassay for circulating antibiotic levels	BR

ORGAN OR DISEASE ORIENTED PANELS

Organ "panels" as an approach to diagnosis have been developed in response to the increased use of general screening programs that are now in use in physicians' offices, health centers, clinics, and hospitals. Also included here are profiles that combine laboratory tests together under a problem oriented classification. The lack of an expanded list of laboratory tests under each number is deliberate. Because no two laboratories utilize the same array of tests in a particular panel, each laboratory should establish its own profile and accompany each reported panel by a listing of the components of that panel performed by the laboratory.

		Unit Value
80050	General health screen panel	31.0
80052	Pre–marital profile	BR
80053	Executive profile	BR
80055	Obstetric profile	BR
80058	Hepatic function panel	BR
80059	Hepatitis panel	BR
80060	Hypertension panel	BR
80061	Lipid profile	BR
80062	Cardiac evaluation (including coronary risk) panel	BR
80063	Cardiac injury panel;	BR
80064	with creatine phosphokinase (CPK) and/or lactic dehydrogenase (LDH) isoenzyme determination	BR
80065	Metabolic panel	BR
80066	Malabsorption panel	BR
80067	Pulmonary (lung function) panel	BR
80068	Lung maturity profile	BR
80070	Thyroid panel;	BR
80071	with thyrotropin releasing hormone (TRH)	BR
80072	Arthritis panel	BR
80073	Renal panel	BR
80075	Parathyroid panel	BR
80080	Prostatic panel	BR
80082	Pancreatic panel	BR
80084	Pituitary panel	BR
80085	Microcytic anemia panel	BR
80086	Macrocytic anemia panel	BR
80088	Transition panel (for management of patient with proven metastatic disease)	BR
80089	Muscle panel	BR
80090	Antibody panel (e.g., TORCH: Toxoplasma IFA, rubella HI, cytomegalovirus CF, herpes virus CF)	BR
80099	Unlisted panel	BR

CONSULTATIONS (CLINICAL PATHOLOGY)

A clinical pathology consultation is a service, including a written report, rendered by the pathologist in response to a request from an attending physician in relation to a test result(s) requiring additional medical interpretive judgment. Reporting of a test result(s) without medical interpretive judgment is not considered a clinical pathology consultation.

80500	Clinical pathology consultation; limited, without review of patient's history and medical records	BR
80502	comprehensive, for a complex diagnostic problem, with review of patient's history and medical records	BR

(For consultations involving the examination and evaluation of the patient, see 90600–90643)

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-204, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-204, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-204, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-204, filed 12/23/80, effective 3/1/81; Order 74-39, § 296-23-204, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-204, filed 1/30/74.]

WAC 296-23-208 Urinalysis.

(For specific analyses, see appropriate section)

		Unit Value
81000	Urinalysis, routine, complete	12.0
81002	routine, without microscopy	8.0
81004	components, single, not otherwise listed, specify	5.0
81005	chemical, qualitative any number of constituents	8.0

(81006 urine volume measurement has been deleted. To report, use 81099)

81010	concentration and dilution test	14.0
81011	water deprivation test	BR
81012	water deprivation test with vasopressin response	BR
81015	microscopic	10.0
81020	two or three glass test	10.0
81030	Quantitative sediment analysis and quantitative protein (Addis count)	40.0
81099	Unlisted urinalysis procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-208, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-208, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-208, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-208, filed 1/30/74. Formerly WAC 296-23-245.]

WAC 296-23-212 Chemistry and toxicology.

The material for examination can be from any source. Examination is quantitative unless specified. (For list of automated, multichannel tests, see 80003-80019.)

		Unit Value
82000	Acetaldehyde, blood	40.0
82003	Acetaminophen, urine	40.0

(Acetic anhydride, see volatiles, 84600)

82005	Acetoacetic acid, serum	40.0
82009	Acetone, qualitative	12.0
82010	quantitative	12.0

(For acetone bodies, see 82009-82010, 82635, 83947)

82011	Acetylsalicylic acid; quantitative	32.0
82012	qualitative	32.0
82013	Acetylcholinesterase,	40.0

(Acid, gastric, see gastric acid, 82926-82932)

(Acid phosphatase, see 84060-84065)

82015	Acidity, titratable, urine	30.0

(ACTH, see 82024)

(Adrenalin-Noradrenalin, see catecholamines, 82382-82384)

82024	Adrenocorticotropic hormone (ACTH), RIA	120.0
82030	Adenosine; 5'-diphosphate (ADP) and 5'-monophosphate (AMP), cyclic, RIA, blood	40.0
82035	5'-triphosphate, blood	40.0
82040	Albumin, serum	°20.0
82042	urine, quantitative (specify method, e.g., Esbach)	20.0

(For albumin/globulin ratio, albumin/globulin ratio by electrophoretic method, see 84155-84200)

82055	Alcohol (ethanol), blood, chemical	30.0
82060	by gas-liquid chromatography	40.0
82065	urine, chemical	30.0
82070	by gas-liquid chromatography	40.0
82072	Alcohol (ethanol) gelation	30.0
82075	breath	60.0
82076	Alcohol; isopropyl	60.0
82078	methyl	60.0
82085	Aldolase, blood, kinetic ultraviolet method	26.0
82086	colorimetric	20.0
82087	Aldosterone; double isotope technique	120.0
82088	RIA blood	100.0
82089	RIA urine	100.0

(Alkaline phosphatase, see 84075-84080)

82095	Alkaloids, tissue, screening	80.0
82096	quantitative	120.0
82100	urine, screening	80.0
82101	quantitative	120.0

(See also 82486, 82600, 82662, 82755, 84231)

(Alpha amino acid nitrogen, see 82126)

(Alpha-hydroxybutyric (HBD) dehydrogenase, see 83485, 83486)

(Alphaketoglutarate, see 83584)

(Alpha tocopherol (Vitamin E), see 84446)

82112	Amikacin	BR

(Amikacin serum radioimmunoassay, see 80040)

82126	Alpha amino acid nitrogen	50.0
82128	Amino acids, qualitative	40.0
82130	Amino acids, urine or plasma chromatographic fractionation and quantitation	180.0
82134	Aminohippurate, para (PAH)	30.0

		Unit Value
	(For administration, see 36410, 99070)	
82135	Aminolevulinic acid, delta (ALA) ..	50.0
82137	Aminophylline	60.0
82138	Amitriptyline	60.0
82140	Ammonia, blood	40.0
82141	urine	40.0
82142	Ammonium chloride loading test ...	40.0
82143	Amniotic fluid scan (spectrophotometric)	50.0
	(For L/S ratio, see 83661)	
	(Amobarbital, see 82205–82210)	
82145	Amphetamine, or methamphetamine, chemical, quantitative	80.0
82150	Amylase, serum	30.0
82155	isoenzymes electrophoretic	BR+
82156	urine (diastase)	30.0
82157	Androstenedione RIA	80.0
82159	Androsterone	50.0
82160	RIA	50.0
	(See also 83593–83596)	
	(Angiotensin I, see renin, 84244)	
82163	Angiotensin II, RIA	BR
82165	Aniline	BR
	(Antidiuretic hormone, RIA, see 84588)	
82168	Antihistamines	BR
82170	Antimony, urine	80.0
	(Antimony, screen, see 83015)	
	(Antitrypsin, alpha–1–, see 86329)	
82173	Arginine tolerance test	BR
82175	Arsenic, blood, urine, gastric contents, hair or nails, quantitative	80.0
	(For heavy metal screening, see 83015)	
82180	Ascorbic acid (Vitamin C) blood ...	40.0
	(Aspirin, see acetylsalicylic acid, 82011, 82012)	
	(Atherogenic index, blood, ultracentrifugation, quantitative, see 83717)	
82205	Barbiturates quantitative	60.0
82210	quantitative and identification .	80.0
	(For qualitative screen, see 82486, 82660, 82662, 82755, 84231)	
82225	Barium	BR
	(Bence–Jones protein, 84185)	
82230	Beryllium, urine	80.0
82231	Beta–2 microglobulin, RIA; urine ..	BR
82232	serum	BR
82235	Bicarbonate excretion, urine	BR
82236	Bicarbonate loading test	BR
	(Bicarbonate, see 82374)	
82240	Bile acids, blood, fractionated	120.0
82245	Bile pigments, urine	8.0
°82250	Bilirubin, blood, total or direct	°24.0
82251	blood, total AND direct	30.0
82252	feces, qualitative	BR
82260	urine, quantitative	12.0
82265	amniotic fluid, quantitative	30.0
82268	Bismuth	80.0
82270	Blood, feces, occult, screening	8.0
82273	duodenal, gastric contents, qualitative	BR
	(Blood urea nitrogen (BUN), see 84520–84525, 84545)	
	(Blood volume, see 84605–84610, 78110, 78111)	
82280	Boric acid, blood	100.0
82285	urine	100.0
82286	Bradykinin	BR
82290	Bromides, blood	24.0
82291	urine	40.0
	(For bromsulphthalein (BSP), see 84382)	
82300	Cadmium, urine	100.0
82305	Caffeine	60.0
82306	Calcifediol (25–OH Vitamin D–3), chromatographical technique	BR
82307	Calciferol (Vitamin D) RIA	BR
82308	Calcitonin, RIA	80.0
82310	Calcium, blood, chemical	°22.0
82315	fluorometric	°22.0
82320	emission flame photometry	22.0
82325	atomic absorption flame photometry	24.0
82330	fractionated, diffusible	60.0
82331	after calcium infusion test	24.0
82335	urine, qualitative (Sulkowitch) ...	11.0
82340	quantitative timed specimen ...	32.0
82345	feces, quantitative timed specimen	80.0
82355	Calculus (stone) qualitative, chemical	40.0
82360	quantitative, chemical	60.0
82365	infrared spectroscopy	60.0
82370	X–ray diffraction	50.0
	(Carbamates, see individual listings)	
82372	Carbamazepine, serum	BR
82374	Carbon dioxide, combining power or content	10.0
	(See also 82801–82803, 82817)	
82375	Carbon monoxide, (carboxyhemoglobin); quantitative	48.0
82376	qualitative	48.0
	(Carbon tetrachloride, see 84600)	
	(Carboxyhemoglobin, see 82375, 82376)	
82380	Carotene, blood	40.0

		Unit Value
	(Carotene plus Vitamin A, see 84595)	
82382	Catecholamines (dopamine, norepinephrine, epinephrine); total urine.	BR
82383	blood	BR
82384	fractionated	BR
	(For urine metabolites, see 83835, 84585)	
82390	Ceruloplasmin, chemical (copper oxidase), blood	40.0
	(For gel diffusion technique, see 86331; immunodiffusion technique, see 86329)	
82400	Chloral hydrate, blood	60.0
82405	urine	40.0
82415	Chloramphenicol, blood	40.0
82418	Chlorazepate dipotassium	40.0
82420	Chlordiazepoxide, blood	60.0
82425	urine	60.0
82435	Chlorides, blood, (specify chemical or electrometric)	°20.0
82436	urine, (specify chemical, electrometric or Fantus test)	20.0
82437	sweat (without iontophoresis)	20.0
	(For iontophoresis, see 89360)	
82438	spinal fluid	20.0
82441	Chlorinated hydrocarbons, screen	20.0
82443	Chlorothiazide–hydrochlorothiazide	60.0
	(Chlorpromazine, see 84021, 84022)	
82465	Cholesterol, serum; total	°22.0
82470	total and esters	30.0
82480	Cholinesterase, serum	40.0
82482	RBC	60.0
82484	serum and RBC	80.0
82485	Chondroitin B sulfate, quantitative.	BR
	(Chorionic gonadotropin, see gonadotropin, 82996–83002)	
82486	Chromatography; gas–liquid, compound and method not elsewhere specified	BR
82487	paper, 1–dimensional, compound and method not elsewhere specified	BR
82488	paper, 2–dimensional, not elsewhere specified	BR
82489	thin layer, not elsewhere specified	BR
82490	Chromium, blood	100.0
82495	urine	100.0
82505	Chymotrypsin, duodenal contents	30.0
82507	Citric acid	80.0
82512	Clonazepam	BR
82520	Cocaine, quantitative	60.0
	(Cocaine, screen, see 82486, 82660, 82662, 82755, 84231)	
	(Codeine, quantitative, see 82096, 82101)	
	(Complement, see 86159–86162)	
	(Compound S, see 82634)	
82525	Copper, blood	60.0
82526	urine	60.0
	(Coprobilinogen, feces, 84575)	
	(Coproporphyrins, see 84118–84121)	
	(Corticosteroids, see 83492–83496)	
82528	Corticosterone, RIA	BR
	(See also 83593–83597)	
82529	Cortisol; fluorometric, plasma	36.0
82531	CPB, plasma	75.0
82532	CPB, urine	75.0
82533	RIA, plasma	90.0
82534	RIA, urine	90.0
82536	after adrenocorticotropic hormone (ACTH) Administration	BR
82537	48 hours after continuous ACTH infusion	BR
82538	after metyrapone tartrate administration	BR
82539	dexamethasone suppression test, plasma and/or urine	BR
82540	Creatine, blood	24.0
82545	urine	40.0
82546	Creatine and creatinine	50.0
82550	Creatine phosphokinase (CPK), blood, timed kinetic ultraviolet method	26.0
82552	isoenzymes	30.0
82555	colorimetric	20.0
82565	Creatinine, blood	°20.0
82570	urine	°20.0
82575	clearance	°40.0
82585	Cryofibrinogen, blood	40.0
82595	Cryoglobulin, blood	40.0
	(Crystals, pyrophosphate vs. urate, see 84208)	
82600	Cyanide, blood	80.0
82601	tissue	80.0
82606	Cyanocobalamin (Vitamin B–12); bioassay	70.0
82607	RIA	45.0
82608	unsaturated binding capacity	60.0
	(Cyclic AMP, see 82030)	
	(Cyclic GMP, see 83008)	
82614	Cystine, blood, qualitative	BR
82615	Cystine, and homocystine, urine, qualitative	30.0
82620	quantitative	40.0
82624	Cystine aminopeptidase	BR
	(D hemoglobin, see 83053)	
	(Delta–aminolevulinic acid (ALA), see 82135)	

		Unit Value
82626	Dehydroepiandrosterone, RIA	BR
	(See also 83593–83596)	
	(Deoxycortisol, 11– (compound S), RIA, see 82634)	
82628	Desipramine	BR
82633	Desoxycorticosterone, 11–RIA	BR
	(See also 83593–83596)	
82634	Desoxycortisol, 11–(compound S), RIA	80.0
	(See also 83492)	
82635	Diacetic acid	18.0
	(Diagnex blue, tubeless gastric, see 82939)	
	(Diastase, urine, see 82156)	
82636	Diazepam	50.0
82638	Dibucaine number	34.0
82639	Dicumarol	BR
	(Dichloroethane, see 84600)	
	(Dichloromethane, see 84600)	
	(Diethylether, see 84600)	
82640	Digitoxin digitalis, blood RIA	BR+
82641	urine	BR+
82643	Digoxin, RIA	36.0
82646	Dihydrocodinone	BR
	(Dihydrocodinone screen, see 82486–82489, 82662, 82755, 84231)	
82649	Dihydromorphinone, quantitative	75.0
	(Dihydromorphinone screen, see 82486, 82489, 82662, 82755, 84231)	
82651	Dihydrotestosterone (DHT)	BR
82654	Dimethadione	BR
	(Diphenylhydantoin, see 84045)	
	(Dopamine, see 82382–82384)	
82656	Doxepin	BR
82660	Drug screen (amphetamines, barbiturates, alkaloids)	65.0
	(See also 82486–82489, 82662, 82755, 84231)	
	(Duodenal contents, see individual enzymes; for intubation and collection, see 89100)	
82662	Enzyme immunoassay technique for drugs, EMIT	30.0
82664	Electrophoretic technique, not elsewhere specified	45.0
82666	Epiandrosterone	BR
	(See also 83593, 83596)	
	(Epinephrine, see 82382–82384)	
82668	Erythropoietin, bioassay	BR
	(For HI method, see 86280)	
82670	Estradiol, RIA (placental)	90.0
82671	Estrogens; fractionated	85.0
82672	total	60.0
82673	Estriol; fluorometric	54.0
82674	GLC	45.0
82676	Chemical	75.0
82677	RIA	105.0
	(Estrogen receptor assay, see 84233)	
82678	Estrone; chemical	75.0
82679	RIA	90.0
	(Ethanol, see 82055–82075)	
82690	Ethchlorvynol (Placidyl), blood	60.0
82691	urine	60.0
82692	Ethosuximide	BR
	(Ethyl alcohol, see 82055–82075)	
82694	Etiocholanolone	BR
	(See also 83593, 83596)	
	(Evans blue, see blood volume, 84605–84610)	
82696	Etiocholanolone, RIA	50.0
82705	Fat or lipids, feces, screening	10.0
82710	quantitative, 24 or 72 hour specimen	100.0
82715	Fat differential, feces, quantitative	BR
82720	Fatty acids, blood, esterified	40.0
82725	nonesterified	40.0
82727	Ferric chloride, urine	BR
82728	Ferritin, specify method (e.g., RIA, immunoradiometric assay)	BR
	(Fetal hemoglobin, see hemoglobin 83020, 83033, and 85460)	
	(Fetoprotein, alpha–1, see 86329)	
82730	Fibrinogen, quantitative	21.0
	(See also 85371, 85377)	
82735	Fluoride, blood	100.0
82740	urine	100.0
82741	Flucytosine (5–fluorocytosine)	BR
82742	Flurazepam	BR
82745	Folic acid, (folate), blood bioassay	BR+
82746	RIA	45.0
	(Follicle stimulating hormone (FSH), see 83000, 83001)	
82750	Formimino–glutamic acid (FIGLU), urine	100.0
82755	Free radical assay technique for drugs (FRAT)	BR
82756	Free thyroxine index (T–7)	BR
82757	Fructose, semen	BR

		Unit Value
	(Fructose, TLC screen, see 84375)	
82759	Galactokinase, RBC	BR
82760	Galactose, blood	40.0
82763	tolerance test	75.0
82765	urine	40.0
82775	Galactose-1-phosphate uridyl transferase	60.0
	(For TLC screen, see 84375)	
82776	screen	18.0
82780	Gallium	BR
82784	Gammaglobulin, A, D, G, M nephelometric, each	12.0
82785	Gammaglobulin, E, RIA	75.0
82786	Gammaglobulin, salt precipitation method	21.0
	(Gammaglobulin by gel (immuno) diffusion, see 86329)	
	(Gamma-glutamyl transpeptidase (GGT), see 82977)	
82790	Gases, blood, oxygen saturation; by calculation from pO_2	40.0
82791	by manometry	40.0
82792	by oximetry	20.0
82793	by spectrophotometry	40.0
82795	by calculation from pCO_2	6.0
82800	Gases, blood, pH, only	20.0
82801	pCO_2	24.0
82802	pH, pCO_2 by electrode	42.0
82803	pH, pCO_2, pO_2 simultaneous	54.0
82804	pO_2 by electrode	40.0
82812	pO_2 by manometry	24.0
82817	pH, pCO_2 by tonometry	24.0
	(For arterial puncture, see 36600)	
	(For blood gas studies as a part of pulmonary function studies, see 94700-94710)	
82926	Gastric acid, free and total; single specimen	11.2
82927	each additional specimen	9.0
82928	Gastric acid, free or total; single specimen	9.0
82929	each additional specimen	7.5
82931	Gastric acid, pH titration; single specimen	24.0
82932	each additional specimen	18.0
82939	Gastric analysis, tubeless (Diagnex blue)	BR
	(Gastric analysis, with stimulation, see 89140, 89141)	
	(Gastric analysis, pepsin, see 83974)	
	(For gastric intubation, see 89130, 74340)	
	(For aspiration of specimens with insulin administration (Hollander test), see 91075)	
82941	Gastrin, RIA	48.0
	(GGT, see 82977)	
	(GLC, gas liquid chromatography, see 82486)	
82942	Globulin, serum	10.5
	(See also 82784, 82786, 84155-84200, 86329)	
82943	Glucagon, RIA	BR
82944	Glucosamine	6.0
82947	Glucose; except urine (e.g., blood, spinal fluid, joint fluid)	10.5
82948	blood, stick test	8.2
82949	fermentation	22.5
82950	post glucose dose (includes glucose)	13.5
82951	tolerance test (GTT), three specimens (includes glucose)	37.5
82952	tolerance test, each additional beyond three specimens	10.5
	(For intravenous glucose tolerance test, see 82961)	
82953	tolbutamide tolerance test	15.0
	(For insulin tolerance test, see 82937)	
	(For leucine tolerance test, see 83681)	
82954	urine	20.0
	(For intubation, see 89130, 79340)	
82955	Glucose-6-phosphate dehydrogenase, erythrocyte	60.0
82960	screen	56.0
82961	Glucose tolerance test, intravenous	BR
	(For glucose tolerance test with medication use 90784 in addition)	
82963	Glucosidase, beta	BR
82965	Glutamate dehydrogenase, blood	40.0
	(Glutamic oxaloacetic transaminase (SGOT), see 84450-84455)	
	(Glutamic pyruvic transaminase (SGPT), see 84460-84465)	
82975	Glutamine (glutamic acid amide), spinal fluid	80.0
82977	Glutamyl transpeptidase, gamma (GGT)	BR
82978	Glutathione	BR
82979	Glutathione reductase, RBC	BR
82980	Glutethimide	56.2
	(Glycohemoglobin, see 83036)	
82985	Glycoprotein electrophoresis	60.0
82995	Gold, blood	100.0
82996	Gonadotropin, chorionic, bioassay; qualitative	30.0
82997	quantitative	30.0
82998	Gonadotropin, chorionic, RIA	38.0

		Unit Value
	(Gonadotropin, chorionic, beta subunit, RIA, see 84701)	
	(For immunoassay, qualitative, see 86006, 86007)	
	(For quantitative titer, see 86008, 86009)	
83000	Gonadotropin, pituitary FSH; bioassay	90.0
83001	RIA	90.0
83002	(LH)(ICSH)RIA	90.0
83003	Growth hormone (HGH), (somatotropin) RIA	48.0
83004	after glucose tolerance test	48.0
	(For growth hormone secretion after arginine tolerance test, see 82173)	
	(For human growth hormone antibody, RIA, see 86277)	
83005	Guanase, blood	40.0
83008	Guanosine monophosphate (GMP) cyclic, RIA	BR
83010	Haptoglobin, chemical	60.0
83011	quantitative, electrophoresis	30.0
83012	phenotypes, electrophoresis	60.0
83015	Heavy metal screen (arsenic, bismuth, mercury, antimony); chemical (e.g., Reinsch, Gutzeit)	30.0
83018	chromatography, DEAE column	BR
83020	Hemoglobin, electrophoresis (includes A_2, S, C, etc.)	80.0
	(Hemoglobin, carboxyhemoglobin (CO), see 82375, 82376; colorimetric, see 85018, 85031)	
83030	F (fetal), chemical	40.0
83033	F(fetal), qualitative (APT) test, fecal	56.0
83036	glycosylated (Alc)	60.0
83040	methemoglobin, electrophoretic separation	80.0
83045	qualitative	20.0
83050	quantitative	40.0
83051	plasma	40.0
83052	sickle, turbidimetric	34.0
83053	solubility, S-D, etc.	40.0
83055	sulfhemoglobin, qualitative	20.0
83060	quantitative	40.0
83065	thermolabile	BR
83068	unstable, screen	BR
83069	urine	BR
83070	Hemosiderin, urine	12.0
83071	Hemosiderin, RIA	25.6
	(Heroin, screening, see 82660, 82486, 82662, 82755, 84231; quantitative, see 82096, 82101)	
	(HIAA, see 83497)	
83086	Histidine; blood, qualitative	BR
83087	urine, qualitative	BR
83088	Histamine	100.0
	(Hollander test, see 91075)	
	(Homocystine, qualitative, see 82615)	
	(Homocystine, quantitative, see 82620)	
83093	Homogentisic acid; blood, qualitative	BR
83094	Homogentisic acid, urine, qualitative	20.0
83095	quantitative	40.0
	(Hormones, see individual alphabetic listings in chemistry section)	
83150	homo-vanillic acid (HVA), urine	80.0
83485	Hydroxybutyric dehydrogenase, alpha (HBD), blood; kinetic ultraviolet method	22.0
83486	colorimetric method	20.0
83491	Hydroxycorticosteroids, 17- (17-OHCS); RIA	64.1
83492	Hydroxycorticosteroids, 17- (17-OHCS); gas liquid chromatography (GLC)	82.0
83493	blood, Porter-Silber type	45.0
83494	blood, fluorometric	38.0
83495	urine, Porter-Silber type	52.0
83496	urine, fluorometric	52.0
	(See also 82531-82534, 82634, 84409)	
83497	Hydroxyindolacetic acid, 5-(HIAA), urine	60.0
	(For HIAA, blood, see 84260)	
83498	Hydroxyprogesterone, 17-d, RIA	105.0
83499	Hydroxyprogesterone, 20-	BR
83500	Hydroxy-proline, urine, free only	100.0
83505	total only	100.0
83510	free and total	180.0
83523	Imipramine	67.0
	(Immunoglobulines, see 82784, 82785, 82786, 86329, 86335)	
83524	Indican, urine	35.0
83525	Insulin, RIA	40.0
83526	Insulin tolerance	80.0
	(For proinsulin, see 84206)	
83528	Intrinsic factor level	BR
	(For intrinsic factor antibodies, RIA, see 86340)	
83530	Insulin clearance	40.0
	(For administration, see 36410, 99070)	
	(83533, 83534 protein bound iodine have been deleted. To report, use 84999)	
	(For thyroxine, see 84435-84439)	
	(For triiodothyronine (true T-3), RIA, see 84480)	

		Unit Value
	(For T–3 or T–4 radioactive resin uptake, see RT3U, 84250; for RT3U+thyroxine, see 84251)	
83540	Iron, serum, chemical	20.0
83545	automated	12.0
83546	radioactive uptake method	30.0
83550	binding capacity, serum chemical	20.0
83555	automated	12.0
83565	radioactive uptake method	30.0
83570	Isocitric dehydrogenase (IDH), blood, kinetic ultraviolet	26.0
83571	colorimetric	20.0
	(Isopropyl alcohol, see alcohol 82076)	
83576	Isonicotinic acid hydrazide (INH)	105.0
83578	Kanamycin	49.0
83582	Ketogenic steroids, urine; 17–(17–KGS)	45.0
83583	11–desoxy: 11–oxy ratio	75.0
83584	Ketoglutarate, alpha	40.0
	(Ketone bodies, see 82005–82010; urine, see 81000–81005)	
83586	Ketosteroids, 17–(17–KS), blood; total	38.0
83587	fractionation, alpha/beta	75.0
83588	RIA	54.0
83589	Ketosteroids, 17–(17–KS), urine; total	36.0
83590	fractionation, alpha/beta	60.0
83593	chromatographic fractionation	75.0
	(83596 D/A/E ratio has been deleted.)	
83597	11–desoxy: 11–oxy ratio	75.0
	(See also 82528, 82632, 82633, 82666, 82694)	
83599	Ketosteroids, 17–OH, RIA	64.1
83600	Kynurenic acid	90.0
83605	Lactate, lactic acid	40.0
83610	Lactic dehydrogenase (LDH), RIA	33.7
83615	Lactic dehydrogenase (LDH), blood, kinetic ultraviolet method	26.0
83620	colorimetric or fluorometric	°20.0
83624	heat or urea inhibition (total not included)	24.0
83625	isozymes, electrophoretic separation and quantitation	60.0
83626	chemical separation	20.0
83628	Lactic dehydrogenase, liver (LLDH)	20.0
83629	Lactic dehydrogenase (LDH), urine	20.0
83631	Lactic dehydrogenase (LDH), CSF	20.0
	(For hydroxybutyric dehydrogenase (HBD), see 83485)	
83632	Lactogen, human placental (HPL) chorionic somatomammotropin, RIA	30.0
83633	Lactose, urine; qualitative	20.0
83634	quantitative	20.0
	(For tolerance, see 82951–82952)	
	(For TLC screen, see 84375)	
83645	Lead, screening, blood	20.0
83650	urine	20.0
83655	quantitative, blood	60.0
83660	urine	60.0
83661	Lecithin–sphingomyelin ratio (L/S ratio), amniotic fluid	75.0
83670	Leucine amino–peptidase (LAP), blood, kinetic ultraviolet method	26.0
83675	colorimetric	20.0
83680	urine	26.0
83681	Leucine tolerance test	26.0
83685	Lidocaine	20.0
83690	Lipase, blood	30.0
83700	Lipids, blood, total	30.0
83705	fractionated (cholesterol, triglycerides, phospholipids)	60.0
	(For feces, see 82705–82715)	
83715	Lipoprotein, blood; electrophoretic separation and quantitation phenotyping	60.0
83717	analytic ultracentrifugation separation and quantitation (atherogenic index)	100.0
83718	Lipoprotein high density cholesterol (HDL cholesterol) by precipitation method)	BR
83719	Lipoprotein very low density cholesterol (VLDL cholesterol) by ultracentrifugation	BR
83720	Lipoprotein cholesterol fractionation calculation by formula	BR
83725	Lithium, blood, quantitative	60.0
	(Luteinizing hormone (LH), see 83002)	
83727	Luteinizing releasing factor (LRH), RIA	60.0
83728	Lysergic acid diethylamide (LSD) RIA	BR
83730	(Macroglobulins (sia test)	30.0
83735	Magnesium, blood, chemical	20.0
83740	fluorometric	20.0
83750	atomic absorption	40.0
83755	urine, chemical	40.0
83760	fluorometric	40.0
83765	atomic absorption	40.0
83775	Malate dehydrogenase, kinetic ultraviolet method	30.0
	(Maltose tolerance, see 82951, 82952)	
	(Mammotropin, see 84146)	
83785	Manganese, blood or urine	60.0
83790	Mannitol clearance	BR

		Unit Value
	(Marijuana, see tetrahydrocannabinol THC, 84408)	
83795	Melanin, urine, quantitative	60.0
83799	Meperidine, quantitative	54.0
	(For screen, see 82486, 82489, 82662, 82755, 84231)	
83805	Meprobamate, blood or urine	60.0
	(For screen, see 82486, 82489, 84231)	
83825	Mercury quantitative, blood	70.0
83830	urine	70.0
	(Mercury screen, see 83015)	
83835	Metanephrines, urine	52.0
	(For catecholamines, see 82382–82384)	
83840	Methadone	60.0
	(Methamphetamine, see 82145)	
	(Methanol, see 82078)	
83842	Methapyrilene	50.0
83845	Methaqualone	90.0
	(For metals, heavy, screening (Reinsch test), see 82177)	
83857	Methemalbumin	32.0
	(Methemoglobin, see hemoglobin 83045–83050)	
83858	Methsuximide, serum	90.0
	(Methyl alcohol, see 82078)	
83859	Methyprylon	90.0
83860	Morphine, screening	80.0
83861	quantitative	120.0
83862	RIA	82.0
83864	Mucopolysaccharides, acid, blood	60.0
83865	Mucopolysaccharides, acid, urine quantitative	60.0
83866	screen	21.0
83870	Mucoprotein, blood (seromucoid)	40.0
83872	Mucin, synovial fluid (rope test)	21.0
83873	Myeline basic protein, CSF, RIA	BR
	(For oligoclonal bands, see 83916)	
83874	Myoglobin, electrophoresis	30.0
83875	Myoglobin, urine	40.0
83880	Nalorphine	60.0
83885	Nickel, urine	100.0
83887	Nicotine	75.0
83895	Nitrogen, urine, total, 24 hour specimen	60.0
83900	feces, 24 hour specimen	100.0
83910	Nonprotein nitrogen, blood	20.0
	(Norepinephrine, see 82382–82384)	
83915	Nucleotidase 5'–	25.0
83916	Oligocional immune globulin (Ig), CSF, by electrophoresis	BR
	(For myelin basic protein, CSF, see 83873)	
83917	Organic acids; screen, qualitative	30.0
83918	quantitative	30.0
83920	Ornithine carbonyl transferase, (OCT)	24.0
83930	Osmolality, blood	20.0
83935	urine	20.0
83938	Ouabain	BR
83945	Oxalate, urine	40.0
	(For alpha oxoglutarate, see 82120)	
83946	Oxazepam	40.0
83947	Oxybutyric acid, beta	40.0
83948	Oxycodinone	52.0
	(Oxygen, see gases, blood, 82790–82817)	
83949	Oxytocinase, RIA	52.0
	(Para–aminohippuric acid, see 82134)	
83965	Paraldehyde, blood, quantitative	60.0
83970	Parathormone (parathyroid hormone), RIA	165.0
	(PBI, see 83533)	
83971	Penicillin, urine	50.0
83972	Pentazocine	60.0
83973	Pentose, urine, qualitative	13.5
	(For TLC screen, see 84375)	
83974	Pepsin, gastric	23.0
83975	Pepsinogen, blood	40.0
83985	Pesticide, other than chlorinated hydrocarbons, blood, urine or other material	BR+
	(Pesticide, chlorinated hydrocarbons, see 82441)	
83986	pH, body fluid, except blood	BR
	(For blood, see 82800, 82802, 82803, 82817)	
83992	Phencyclidine (PCP)	38.0
83995	Phenol, blood or urine	60.0
84005	Phenolsulphonphthalein (PSP), urine	20.0
	(For injection procedure, see 36410 for provision of materials, see 99070)	
84021	Phenothiazine, urine	100.0
	(See also 82486 et seq.)	
84022	quantitative, chemical	BR
	(For also individual drugs)	
84030	Phenylalanine, blood, Guthrie	12.0
	(Phenylalanine–tyrosine ratio, see 84030, 84510)	
84031	fluorometric	12.0
84033	Phenylbutazone	20.0
84035	Phenylketones; blood, qualitative	20.0

		Unit Value
84037	urine, qualitative	20.0
84038	Phenylpropanolamine	20.0
84039	Phenylpyruvic acid; blood	20.0
84040	Phenylpyruvic acid, urine	20.0
	(For qualitative chemical tests, urine, see 81005)	
84045	Phenytoin	61.0
84060	Phosphatase, acid, blood	24.0
84065	(prostatic) fraction	40.0
84066	prostatic fraction, RIA	60.0
84075	alkaline, blood	24.0
84078	heat stable (total not included)	16.0
84080	isoenzymes, electrophoretic method	BR
84081	Phosphatydylglycerol	BR
84082	Phosphates, tubular reabsorption of (TRP)	60.0
	(Phosphates, inorganic, see 84100–84105)	
	(Phosphates, organic, see 82480–82484)	
84083	Phosphoglucomutase, isoenzymes	60.0
84085	Phosphogluconate, 6–, dehydrogenase, RBC	18.0
84087	Phosphohexose isomerase	30.0
84090	Phospholipids, blood	30.0
	(See also 83705)	
	(For lecithin/sphingomyelin ratio, see 83661)	
84100	Phosphorus, blood	°24.0
84105	urine	°24.0
	(Pituitary gonadotropins, see 83000–83002)	
	(PKU, see 81005, 84030, 84031)	
84106	Porphobilinogen, urine; qualitative	20.0
84110	Porphobilinogen, urine, quantitative	20.0
84118	Porphyrins, copro–, urine; quantitative	30.0
84119	qualitative	24.0
84120	Porphyrins, urine, fractionated (uroporphyrin and coproporphyrin)	64.0
84121	uro–, copro–, and porphobilinogen, urine	80.0
	(For porphyrin precursors, see 82630)	
84126	feces, quantitative	100.0
84128	Porphyrins, plasma	82.0
	(For protoporphyrin, RBC, see 84202, 84203)	
84132	Potassium, blood	°24.0
84133	urine	°24.0
84135	Pregnanediol; RIA	BR
84136	other method (specify)	BR
84138	Pregnanetriol; RIA	BR
84139	other method (specify)	BR
84141	Primidone	60.0
84142	Procainamide	60.0
84144	Progesterone, any method	105.0
	(For proinsulin, RIA, see 84206)	
84146	Prolactin (mammotropin), RIA	225.0
84147	Propoxyphene	60.0
	(For screen, see 82486 et seq.)	
84149	Propranolol	BR
84150	Prostaglandin, any one, RIA	BR
84155	Protein, total, serum, chemical	°20.0
84160	refractometric	12.0
84165	electrophoretic fractionation and quantitation	60.0
84170	total and albumin/globulin ratio	°40.0
	(For serum albumin, see 82040, for serum globulin, 82942)	
84175	other sources, quantitative	24.0
84176	Protein, special studies (e.g., monoclonal protein analysis)	BR
84180	urine, quantitative, 24 hour specimen	24.0
84185	Bence–Jones	12.0
84190	electrophoretic fractionation and quantitation	80.0
84195	spinal fluid semi–quantitative (Pandy)	20.0
84200	electrophoretic fractionation and quantitation	80.0
	(For protein bound iodine (PBI), see 83533)	
84201	Protirelin, thyrotropin releasing hormone (TRH) test	BR
84202	Protoporphyrin, RBC; quantitative	30.0
84203	screen	20.0
84205	Protiptylene	68.0
84206	Proinsulin, RIA	60.0
84207	Pyridoxine (Vitamin B–6)	BR
84208	Pyrophosphate vs. urate, crystals (polarization)	12.0
84210	Pyruvate, blood	30.0
84220	Pyruvic–kinase, RBC	30.0
84228	Quinine	30.0
84230	Quinidine, blood	40.0
84231	Radioimmunoassay (RIA) not elsewhere specified	BR
	(Reinsch test, see 83015)	
84232	Releasing factor	BR
84233	Receptor assay; estrogen (estradiol)	BR
84234	progesterone	BR
84235	endocrine, other than estrogen or progesterone (specify hormone)	BR
84236	progesterone and estrogen	BR
84238	nonendocrine (e.g., acetylcholine) (specify receptor)	BR
84244	Renin (Angiotensin I); (RIA)	60.0
	(See also 82163, angiotensin II)	

		Unit Value
84246	furosemide test	BR
	(84250, 84251 resine uptake have been deleted. To report, use 84479, 84435)	
84252	Riboflavin (Vitamin B–2)	BR
	(Salicylates, see 82011, 82012)	
	(Saline infusion test, see 82091)	
	(Secretin test, see 99070, 89100 and appropriate analyses)	
84255	Selenium, blood, urine or tissue	100.0
84260	Serotonin, blood	120.0
	(For urine metabolites, see 83497)	
84275	Sialic acid, blood	50.0
	(Sickle hemoglobin, see 83020, 83052, 83053, 85660)	
84285	Silica, blood, urine or tissue	100.0
84295	Sodium, blood	°24.0
84300	urine	°24.0
	(Somatomammotropin, see 83632)	
	(Somatotropin, see 83003; chorionic, see 83632)	
84310	Sorbitol dehydrogenase, serum	26.0
84315	specific gravity (except urine)	8.0
84317	Starch, feces, screening	8.0
84318	Stercobilin, qualitative, feces	BR
	(For stone analysis see 82355–82370)	
84324	Strychnine	75.0
	(Sugar, see under glucose)	
84375	sugars chromatographic separation	80.0
	(Sulfhemoglobin, see hemoglobin, 83055–83060)	
	(84382 has been deleted)	
	(For injection, see 36410, 99070)	
84395	Sulfonamide, blood chemical	20.0
	(84397 has been deleted.)	
	(T–3, see 84479–84481)	
	(T–4, see 84435–84439)	
	(84401 has been deleted.)	
84403	Testosterone, blood, RIA	105.0
84405	Testosterone, urine, RIA	120.0
84406	Testosterone, binding protein	BR
84407	Tetracaine	BR
84408	Tetrahydrocannabinol THC (marijuana)	BR
84409	Tetrahydrocortisone or tetrahydrocortisol	105.0
	(See also 83492–83497)	
84410	Thallium, blood or urine	100.0
84420	Theophylline, blood or saliva	60.0
84425	Thiamine (Vitamin B–1)	BR
84430	Thiocyanate, blood	30.0
84434	Thioridazine	40.0
	(Thyrotropin releasing hormone (TRH) test, see 84201)	
84435	Thyroxine, (T–4), CPB or resin uptake	33.0
84436	Thyroxine, true (TT–4), RIA	21.0
84437	Thyroxine (T–4), neonatal	20.0
84439	Thyroxine, free (FT–4), RIA (unbound T–4 only)	45.0
	(84441 Thyroxine (T–4) method unspecified has been deleted. To report, use 84435–84439)	
84441	Thyroxine (T–4), specify method (e.g., CPB, RIA)	40.0
84442	Thyroxine binding globulin (TBG)	52.0
	(Thyroxine, free thyroxine index, T–7, see 82756)	
	(Thyroid hormones, PBI, thyroxine, etc., see 84480, 84441, 84250)	
84443	Thyroid stimulating hormone (TSH), RIA	60.0
84444	Thyrotropin releasing factor (TRF), RIA;	BR
84445	plus long acting (LATS)	BR
84446	Tocopherol alpha (Vitamin E)	38.0
	(Tolbutamide tolerance, see 82951–82952)	
84447	Toxicology, screen; general	BR
84448	sedative (acid and neutral drugs, volatiles)	45.0
84450	Transaminase, blood, glutamic oxaloacetic (SGOT), timed kinetic ultraviolet method	24.0
°84455	colorimetric or fluorometric	°20.0
84460	glutamic pyruvic (SGPT), blood timed kinetic ultraviolet	24.0
°84465	colorimetric or fluorometric	°20.0
	(Transferrin, see 86329)	
84472	Trichloroethanol	60.0
84474	Trichloroacetic acid	36.0
	(Trichloroacetaldehyde, see 82400–82405)	
84476	Trifluoperazine	36.0
84478	Triglycerides, blood	30.0
	(See also 83705)	
84479	Triiodothyronine (T–3), resin uptake	
84480	Triiodothyronine, true (TT–3), RIA	36.0
84481	Triiodothyronine, free (FT–3), RIA (unbound T–3 only)	BR
84483	Trimethadione	36.0
84485	Trypsin, duodenal fluid	30.0

		Unit Value
84488	Trypsin, feces, quantitative, 24 hour specimen	30.0
84490	quantitative	30.0
	(Tubular reabsorption of phosphate, blood and urine, see 84082)	
84510	Tyrosin, blood	40.0
	(Ultracentrifugation, lipoprotein, see 82190)	
	(Urate vs. pyrophosphate crystals, see 84208)	
84520	Urea nitrogen, blood (BUN); quantitative	°22.0
84525	stick test	8.0
84540	urine	°20.0
84545	clearance	°40.0
84550	Uric acid, blood, chemical	°20.0
84555	uricase, ultraviolet method	26.0
84560	urine	20.0
84565	Urobilin, urine, qualitative	12.0
84570	quantitative, timed specimen	24.0
84575	feces, quantitative	60.0
84577	Urobilinogen, feces, quantitative	30.0
84578	Urobilinogen, urine, qualitative	24.0
84580	quantitative, timed specimen	24.0
84583	semiquantitative	20.0
84584	Uropepsin, urine	24.0
	(Uroporphyrins, see 84120, 84121)	
84585	Vanillymandelic acid (VMA), urine	24.0
84588	Vasopressin (antidiuretic hormone), RIA	BR
84589	Viscosity, fluid	10.0
84590	Vitamin A, blood	40.0
84595	including carotene (see also 82380)	60.0
	(Vitamin B-1, see 84425)	
	(Vitamin B-2, see 84252)	
	(Vitamin B-6, see 84207)	
	(Vitamin B-12, blood, see 82606, 82607)	
	(Vitamin B-12, absorption (Schilling), see 78270, 78271)	
	(Vitamin C, see 82180)	
	(Vitamin E, see 84446)	
84597	Vitamin K	BR
	(VMA, see 84585)	
84600	Volatiles (acetic anhydride, carbon tetrachloride, dichloroethane, dichloromethane, diethylether)	45.0
	(For acetaldehyde, see 82000)	
84605	Volume, blood, dye method (Evans blue)	30.0
84610	including total plasma and total blood cell volume	50.0
	(Volume, blood, RISA or Cr-51, see 78110, 78111)	
84613	Warfarin	BR
84615	Xanthurenic acid	BR
84620	Xylose tolerance test, blood	40.0
84630	Zinc, quantitative, blood	100.0
84635	urine	100.0
84645	Zinc sulphate turbidity	20.0
	(84680 has been deleted. To report use 82677)	
84695	Gentamicin	38.5
84701	Gonadotropin, chorionic, beta subunit, RIA	66.7
84800	Thyroid stimulating hormone (TSH), neonatal	60.0
84810	Tobramycin	BR
84999	Unlisted chemistry or toxicology procedure	BR

NOTE:

Gas-liquid chromatography, paper chromatography, electrophoresis, nuclear medicine, enzyme immunoassay and radioimmunossay techniques are being extended constantly for the analysis of many drugs, hormones and other substances. Where these methodologies are not specifically listed under the compound in question, such tests should be coded under the listing for the specific general methodology. (For immunodiffusion, immunoprecipitin, and counter-immunoelectrophoretic methods other than enzyme and radioimmunoassay techniques, see immunology section.)

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-212, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-212, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-212, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-212, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-212, filed 1/30/74.]

WAC 296-23-216 Hematology.

		Unit Value
	(Includes blood clotting (coagulation) procedures. For blood banking procedures, see under Immunology.)	
	(Agglutinins, see Immunology)	
	(Antifactor (specific coagulation factors), see 85300-85341)	
	(Antiplasmin, see 85410)	
	(Antiprothrombinase, see 85311)	
	(Antithrombin III, see 85300)	
	(Basophil count, see 85005)	
85000	Bleeding time Duke	10.0
85002	Ivy or template	24.0

		Unit Value
	(85003 Adelson–Crosby immersion method has been deleted. To report, use 85999)	
	(Blood cell morphology only, see 85548)	
85005	Blood count; basophil count, direct	10.0
85007	differential WBC count (includes RBC morphology and platelet estimation)	7.5
	(See also 85548, 85585)	
	(For other fluids, e.g., CSF, see 89051, 89190)	
85009	differential WBC count, buffy coat	12.0
85012	eosinophil count, direct	10.0
	(For nasal smear, see 89180)	
85014	hematocrit	8.0
85018	hemoglobin, colorimetric	8.0
	(For other hemoglobin determination, see 83020–83068)	
85021	hemogram, automated RBC, WBC, Hgb, Hct and indices only)	10.5
85022	hemogram, automated, differential WBC count (CBC)	15.0
85027	hemogram, automated, with platelet count	12.0
85028	hemogram, automated, and differential WBC count (CBC) with platelet count	17.0
	(For additional laboratory testing utilizing automated hemogram techniques, use Modifier –22, Unusual Services)	
85031	hemogram, manual, complete CBC (RBC, WBC, Hgb, Hct, differential and indices)	16.5
85041	red blood cell (RBC) only	8.0
	(See also 85021–85031, 89050)	
85044	reticulocyte count	12.0
85048	white blood cell (WBC)	8.0
	(See also 85021–85034)	
85060	Blood smear, peripheral, interpretation by physician with written report	
85095	Bone marrow smear and/or cell block; aspiration only	45.0
	(85096 has been deleted. For interpretation of smear, use 85097; for cell block interpretation, see 88304, 88305)	
85097	smear interpretation only	
85100	Bone marrow, aspiration, staining, and interpretation of smears	140.0
	(For special stains, see 85535, 85540, 85560, 88312–88313)	
85101	aspiration and staining only (smears)	75.0
85102	biopsy core (needle)	75.0
	(For trocar, see 20220)	
85103	cell block or biopsy, stain and interpretation	60.0
85105	interpretation only	100.0
85109	staining and preparation only	30.0
	(85120 bone marrow transplant has been deleted. To report see 38230–38240)	
85150	Calcium clotting time	40.0
85160	Calcium saturation clotting test	40.0
85165	Capillary fragility test (Rumpel–Leede) (independent procedure)	20.0
85170	Clot retraction	8.0
85171	quantitative	45.0
85172	inhibition by drugs	BR
85175	Clot lysis time, whole blood dilution	40.0
	(Clotting factor I (fibrinogen), see 82730, 85371–85377)	
85210	factor II (prothrombin assay)	40.0
	(See also 85610–85618)	
85220	factor V (AcG or pro–accelerin) labile factor	40.0
85230	factor VII (proconvertin stable factor)	40.0
85240	factor VIII (AHG) one stage	40.0
85242	factor VIII (AHG), two stage	40.0
85250	factor IX (PTC or Christmas)	40.0
85260	factor X (Stuart–Prower)	40.0
85270	factor XI (PTA)	40.0
85280	factor XII (Hagemann)	40.0
85290	factor XIII (fibrin stabilizing)	40.0
85291	factor XIII (fibrin stabilizing), screen solubility	40.0
85292	prekallikrein assay (Fletcher factor assay)	BR
82593	high molecular weight kinninogen assay (Fitzgerald factor assay)	BR
85300	Clotting inhibitors or anti–coagulants, anti–thrombin	40.0
85301	antithrombin III, antigen assay	BR
85302	protein C assay	BR
85310	anti–thromboplastins	40.0
85311	anti–prothrombinase	40.0
85320	anti–prothromboplastins	40.0
85330	anti–factor VIII	40.0
85340	cross recalcification time (mixtures)	40.0
85341	PTT inhibition test	BR
85345	Coagulation time (Lee and White)	30.0
85347	Coagulation time, activated	20.0
85348	other methods	BR
	(Complete blood count, see 85021–85031)	

		Unit Value
	(Differential count, see 85007 et seq.)	
	(Drug inhibition, clot retraction, see 85172)	
	(Duke bleeding time, see 85000)	
	(Eosinophil count, direct, see 85012)	
	(Eosinophils, microscopic examination for, in various body fluids, see 89180)	
	(Ethanol gel, see 85363)	
85360	Euglobulin lysis	40.0
	(Fetal hemoglobin, see 83030–83033, 85460)	
85362	Fibrin degradation (split) products (FDP)(FSP); agglutination, slide	12.0
85363	ethanol gel	10.0
85364	hemagglutination inhibition (Merskey), microtiter	36.0
85365	immunoelectrophoresis	BR
85367	precipitation	18.0
85368	protamine paracoagulation (PPP)	BR
85369	staphylococcal clumping	12.0
	(Fibrinogen, quantitative, see 82730)	
85371	Fibrinogen, semiquantitative; latex	40.0
85372	turbidimetric	22.5
85376	Fibrinogen; thrombin with plasma dilution	24.0
85377	thrombin time dilution	36.0
85390	Fibrinolysins, screening	20.0
85392	with EACA control	BR
85395	semi–quantitative	30.0
85396	lysis of homologous clot	105.0
85398	Fibrinolysis, quantitative	45.0
85400	Fibrinolytic mechanisms, plasmin	BR
85410	anti–plasmin	BR
85420	plasminogen	BR
85421	plasminogen, antigenic assay	BR
	(For plasminogen activator, see 85665)	
	(Fragility, red blood cell, see 85547, 85555–85557)	
85441	Heinz bodies; direct	9.0
85445	induced, acetyl phenylhydrazine	19.5
	(For hematocrit (pcv), see 85014, 85021–85031)	
	(For hemoglobin, see 83020–83060, 85050)	
85460	Hemoglobin, fetal, differential lysis (Kleihauer)	26.0
	(See also 83030, 83033)	
	(Hemogram, see 85021–85031)	
	(Hemolysins, see 86006, 86281, 86282)	
85520	Heparin assay	60.0
85530	Heparin–protamine tolerance test	60.0
85535	Iron stain (RBC or bone marrow smears)	18.0
	(Ivy bleeding time, see 85002)	
85538	Leder stain (esterase) blood or bone marrow	30.0
85540	Leucocyte alkaline phosphatase	20.0
85544	Lupus erythematosus (LE) cell prep	20.0
	(Lysozyme, see 85549)	
85547	Mechanical fragility, RBC	30.0
85548	Morphology of red blood cells, only	9.0
85549	Muramidase, serum	52.0
85550	Nitroblue tetrazolium test (NBT)	36.0
85555	Osmotic fragility, RBC;	15.0
85556	incubated, qualitative	18.0
85557	incubated, quantitative	60.0
	(Packed cell volume, see 85014)	
	(Partial thromboplastin time, see 85730–85732)	
	(Parasites, blood, e.g., malaria smears, see 87207)	
85560	Peroxidase stain, WBC	15.0
	(Plasmin, see 85400)	
	(Plasminogen, see 85420)	
	(Plasminogen activator, see 85665)	
85575	Platelet; adhesiveness (in vivo)	45.0
85576	aggregation (in vitro), any agent	BR
85577	retention (in vitro), glass bead	30.0
85580	Platelet, count (Rees–Ecker)	14.0
85585	estimation on smear, only	10.0
	(See also 85007)	
85590	phase microscopy	20.0
85595	electronic technique	20.0
85610	Prothrombin time	16.0
	(See also 85618)	
85612	Russell viper venom type (includes venom)	36.0
85614	two stage	30.0
85615	Prothrombin utilization (consumption)	40.0
85618	Prothrombin–Proconvertin, P & P (Owren)	18.0
	(Red blood cell count, see 85021–85031)	
85630	Red blood cell size (Price–Jones)	40.0
85632	Red blood cell peroxide hemolysis	30.0
85635	Reptilase test	33.0
	(Reticulocyte count, see 85044)	
	(Rumpel–Leede test, see 85165)	
85640	Reticulocyte count	14.0
85650	Sedimentation rate (esr) Wintrobe type	14.0
85651	Westergren type	10.5

		Unit Value
85660	Sickling of red blood cells reduction slide method	14.0
	(Sickling, electrophoresis, see 83020)	
	(Sickling, solubility, S–D, see 83053)	
	(Sickling, turbidimetric (Sickledex dithionate), see 83052)	
	(Siderocytes, see 85535)	
	(Smears for parasites, malaria, etc., see 87207)	
	(Staphyloccoccal clumping test, see 85369)	
85665	Streptokinase titer (plasminogen activator)	BR
85670	Thrombin time, plasma	20.0
85675	titer	12.0
85680	Thrombo test	20.0
85700	Thromboplastin generation test, screening (Hicks–Pitney)	40.0
85710	definitive, with platelet substitute	45.0
85711	with patient's platelets	45.0
85720	all factors	BR+
	(For individual clotting factors, see 85210 et seq.)	
85730	Thromboplastin time, partial (PTT) plasma or whole blood	30.0
85732	substitution plasma	30.0
	(For thromboplastin inhibition test, see 85341)	
	(For tourniquet test, see 85165)	
85810	Viscosity, blood	40.0
85820	serum or plasma	40.0
	(WBC count, see 85021–85031, 85048, 89050)	
85999	Unlisted hematology procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-216, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-216, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-216, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-216, filed 1/30/74. Formerly WAC 296-23-210.]

WAC 296-23-221 Immunology.

		Unit Value
	(Includes serology, immuno–hematology and blood banking)	
	(Acid hemolysins, see 86281)	
	(Actinomycosis, see 86000–86009, 86450)	
86000	Agglutinins febrile, each	14.0
86002	panel (typhoid O & H, paratyphoid A & B, brucella and Proteus OX-19	45.0
86004	warm	36.0
	(Agglutinins and autohemolysins, see 86004, 86011–86013, 86281–86283, 86006–86009)	
	(Agglutinins, auto, see 86282–86283, 86011, 86013)	
	(Agglutinins, cold, see 86006, 86013, 86282, 86283)	
	(Alpha–1 antitrypsin, see 86329)	
	(Alpha–1 feto–protein, see 86329)	
	(Amebiasis, see 86171, 86280)	
86006	Antibody, qualitative, not otherwise specified; first antigen, slide or tube	12.0
86007	each additional antigen	7.5
86008	Antibody, quantitative titer, not otherwise specified; first antigen	18.0
86009	each additional antigen	12.0
86011	Antibody, detection, leukocyte antibody	44.0
86012	Antibody absorption, cold auto absorption; per serum	30.0
	(For elution, see 86019)	
86013	differential	45.0
86014	Antibody, platelet antibodies (agglutinins)	45.0
86016	Antibodies, RBC, saline; high protein and antihuman globulin technique	30.0
	(See also 86032)	
86017	with ABO + Rh(D) typing (for holding blood instead of complete crossmatch)	24.0
86018	enzyme technique including antihuman globulin	17.0
86019	elution, any method	45.0
86021	Antibody identification; leukocyte antibodies	60.0
86022	platelet antibodies	75.0
86024	RBC antibodies (8–10 cell panel) standard techniques	38.0
86026	RBC antibodies (8–10 cell panel), with enzyme technique including antihuman globulin	52.0
	(For absorption and elution, see 86012–86013, 86019)	
86028	saline or high protein, each (Rh, AB, etc.)	12.0
	(Anti–DNA, see 86225)	
	(Anti–deoxyribonuclease titer, see 86215)	
86031	Antihuman globulin test; direct (Coombs) 1–3 dilutions	12.0
86032	indirect, qualitative (broad, gamma or nongamma, each)	15.0
86033	indirect, titer (broad, gamma or	

		Unit Value
	nongamma each)	12.0
86034	enzyme technique, qualitative	30.0
86035	drug sensitization, identification (e.g., penicillin)	75.0

(For antibody detection (screening), see 86016, 86017)

(Antihyaluronidase titer, see 86315)

86038	Antinuclear antibodies (ANA), RIA	55.0

(Antinuclear antibodies, fluorescent technique, see 86255, 86256)

86045	Antistreptococcal carbohydrate, anti–A CHO	40.0

(Antistreptococcal antibody, anti–DNAse, see 86215)

(Antistreptokinase titer, see 86590)

86060	Anti–streptolysin O titre	20.0
86063	screen	10.0
86064	Antitrypsin, alpha–1; RIA	20.0
86066	Pi (Protease inhibitor) typing	20.0
86067	other method (specify)	20.0

(Autoagglutinins, see 86282, 86283)

(Autoantibodies, see specific antigens)

(Blastomycosis, see 86006–86009, 86460)

86068	Blood, cross match, complete standard technique, includes typing and antibody screening of recipient and donor; first unit	60.0
86069	each additional unit	45.0
86072	Blood crossmatch; enzyme technique	10.5
86073	screening for compatible unit saline and/or high protein	26.0
86074	antiglobulin technique	15.0

(For enzyme technique, see 86018)

86075	Blood crossmatch, minor only (plasma, Rh immune globulin), includes recipient and donor typing and antibody screening; first unit	44.0
86076	each additional unit	27.0
86077	Blood bank physician services; difficult cross match and/or evaluation of irregular antibody(s), interpretation and written report	BR
86078	investigation of transfusion reaction including suspicion of transmissible disease, interpretation and written report	BR
86079	authorization for deviation from standard blood banking procedures (e.g., use of outdated blood, transfusion of RH incompatible units), with written report	BR

(For incompatibility problems, see 86004, 86011–86014, 86016–86026, 86031–86035, 86068–86076)

(For typing, antibody screening and blood in lieu of crossmatch, see 86017)

(For blood transfusion, see 36430–36460, 36510, 36660)

86080	Blood typing; ABO only	12.0
86082	ABO and Rho(D)	18.0
86090	M N	20.0
86095	Blood typing, RBC antigens other than ABO or Rho(D); antiglobulin technique, each antigen	10.5
86096	direct, slide or tube, including Rh subtypes, each antigen	10.5
86100	Blood typing; Rho(D) only	12.0
86105	Rh genotyping, complete	45.0

(For Rho variant Du, see 86095)

86115	anti–Rh immuno–globulin testing (Rhogam type)	68.0
86120	special (Kell, Duffy, etc.)	BR
86128	Blood autotransfusion, including collection, processing and storage	45.0

(For therapeutic phlebotomy, see 99195)

(86129, 86131, 86134, 86138, and 86139 have been deleted)

(Bovine milk antibody, see 86008, 86009)

(Brucellosis, see 86000–86002, 86470)

86140	C–reactive protein	20.0

(Candidiasis, see 86008)

86149	Carcinoembryonic antigen; gel diffusion	60.0
86151	RIA	60.0

(Cat scratch disease, see 86171, 86480)

86155	Chemotaxis assay, specify method	BR

(Coccidioidomycosis, see 86006–86009, 86171, 86490)

(Cold agglutinin or hemolysin, see 86006–86013, 86282, 86283)

86158	Complement; C'1 esterase	52.0
86159	C'2 esterase	52.0
86162	total (CH 50)	70.0

(For complement fractions, quantitative, see 86329)

86171	Complement fixation tests, each (e.g., cat scratch fever, coccidioidomycosis, histoplasmosis, psittacosis, rubella, streptococcus MG, syphilis) – specify test	40.0

(Coombs test, see 86031–86035)

		Unit Value
86185	Counterelectrophoresis, each antigen .	24.0
	(For HAA, see 86285, 86286)	
	(Crossmatch, see 86068–86076)	
	(86201 and 86202 have been deleted)	
	(Cryptococcosis, see 86008, 86009, 86255, 86256)	
	(Cysticercosis, see 86280)	
86209	Cytotoxic testing	BR
86215	Deoxyribonuclease, antibody	36.0
86225	Deoxyribonucleic acid (DNA) antibody	36.0
	(Diphtheria, see 86280)	
	(Direct antiglobulin test (Coombs), see 86031)	
	(Donath–Landsteiner screen, see 86008, 86009)	
	(Drug sensitization, RBC, see 86035)	
	(Echinococcosis, see 86171, 86280, 86500)	
	(Eosinophils, microscopic examination for, in various body fluids, see 89180)	
86235	Extractable nuclear antigen (ENA), antibody	30.0
	(86240 and 86241 have been deleted)	
	(For cryoprecipitate, see 86201, 86202)	
86243	Fc receptor assay, specify method ...	BR
86244	Feto–protein, alpha–1, RIA	57.0
	(Feto–protein, immunodiffusion method, alpha–1, see 86329)	
	(86245 has been deleted)	
	(Filariasis, see 86280)	
86255	Fluorescent antibody; screen	24.0
86256	titer	36.0
	(Fluorescent technique for antigen identification in tissue, see 88345)	
	(Frei test, see 86530)	
86265	Frozen blood, preparation for freezing, each unit including processing and collection;	BR
86266	with thawing.....	BR
86267	with freezing and thawing	BR
	(FTA, see 86650)	
	(Gc grouping, see 86335)	
	(Gel (agar) diffusion tests, see 86331)	
	(Gm grouping, see 86335)	
	(Gonadotropins, chorionic, see 82996–82998)	
	(86272 and 86273 have been deleted)	
	(86274 has been deleted. For passive immunization with specific hyperimmune serum, see 90742)	
	(Gm grouping, see 86335)	
	(Gonadotropins, chorionic, see 82996–82998)	
86277	Growth hormone, human (HGH), antibody, RIA	BR
	(Ham test, see 86281)	
86280	Hemagglutination inhibition tests (HAI), each (e.g., amebiasis, rubella, viral)	60.0
86281	Hemolysins, acid (for paroxysmal hemoglobinuria) (Ham test)	24.0
86282	Hemolysins and agglutinins, auto, screen, each;	30.0
86283	incubated with glucose (e.g., ATP)	75.0
	(Cold, see 86006–86009, warm 86004, acid 86281)	
86285	Hepatitis B surface antigen (HB_sAg) (Australian antigen, HAA); counterelectrophoresis method	18.0
86286	counterelectrophoresis with concentration of serum	24.0
86287	RIA method	36.0
	(For gel diffusion technique, see 86331; CF, see 86171; HAI, see 86280)	
86288	Hepatitis B core antigen (HB_cAg), RIA.....	BR
86289	Hepatitis B core antibody (HB_cAb), RIA.....	BR
86291	Hepatitis B surface antibody (HB_sAb), RIA	BR
86293	Hepatitis Be antigen (HB_eAg), RIA .	BR
86295	Hepatitis Be antibody (HB_eAb), RIA	BR
86296	Hepatitis A antibody (HAAb), RIA .	BR
	(86297 Hepatitis A virus antibody has been deleted. To report, use 86296)	
86298	IgG antibody.....	BR
86299	IgM antibody	BR
86300	Heterophile antibodies, screening (includes mono–type test) slide or tube .	20.0
86305	quantitative titer	30.0
86310	plus titers after absorption, beef cells and guinea pig kidney	30.0
	(Histoplasmosis, see 86006–86009, 86171)	
	(HLA typing, see 86597)	
	(For hormones, see individual alphabetic listing in chemistry section)	
	(Human growth hormone antibody, RIA, see 86277)	
	(86315 has been deleted)	
86320	Immuno–electrophoresis, serum, each	

		Unit Value
	specimen (plate)	100.0
86325	other fluids (e.g., urine) with concentration, each specimen	100.0
86329	Immunodiffusion; quantitative, each IgA, IgG, IgM, ceruloplasmin, transferrin, alpha–2, macroglobulin, complement fractions, alpha–1 antitrypsin, or other (specify)	30.0
86331	gel diffusion, qualitative (Ouchterlony)	30.0

(For ceruloplasmin by chemical method, see 83290)

(IgE, RIA, see 82785; RIST, see 86423)

86335	Immunoglobulin typing (Gc, Gm, Inv), each	BR

(Insulin antibody, see 86016)

86337	Insulin antibodies, RIA	BR
86338	Insulin factor antibodies, RIA	32.0
86340	Intrinsic factor antibodies, RIA	32.0

(Intrinsic factor, antibody (fluorescent), see 86255, 86256)

(Inv grouping, see 86335)

(Kveim test, see 86565)

(Latex fixation, see individual antigen or antibody; also 86006, 86007)

(LE cell preparation, see 85544)

(LE factor, see 86006, 86007, 86255, 86256)

(Leishmaniasis, see 86280)

(Leptospirosis, see 86006–86009, 86171)

(Leukoagglutinins, see 86013, 86021)

86343	Leukocyte histamine release test (LHR)	BR
86344	Leukocyte phagocytosis	BR

(86345, 86346, and 86347 have been deleted)

86349	Leukocyte transfusion (leukapheresis)	BR

(Lymphocyte culture, see 86353)

(86351 has been deleted)

86353	Lymphocyte transformation, PHA or other	120.0
86357	Lymphocytes; T & B differentiation	165.0
86358	B–cell evaluation	BR

(Malaria, see 87207)

(86365 has been deleted)

(Melioidosis, see 86280)

86376	Microsomal antibody (thyroid); RIA	BR
86377	other method (specify)	30.0
86378	Migration inhibitory factor test (MIF)	BR

(Milk antibody, anti–bovine, see 86008–86009)

(Mitochondrial antibody, liver, see 86255)

(Mononucleosis screening slide, see 86006–86007)

86382	Neutralization test, viral	BR
86384	Nitroblue tetrazolium dye test (NTD)	BR

(Ouchterlony diffusion, see 86331)

(Parietal cell antibody, see 86255, 86256)

86385	Paternity testing, ABO + Rh factors + MN (per individual);	37.5
86386	each additional antigen system	15.0

(Penicillin antibody RBC, see 86035)

(86388, 86389, and 86391 have been deleted)

(Platelet antibodies (agglutinins), see 86014)

(86392, 86393, and 86398 have been deleted)

86402	Precipitin determination, gel diffusion, in aspergillosis, bagassosis, farmer lung, pigeon breeder disease, silo filler disease, other alveolitis (specify)	BR
86405	Precipitin test for blood (species identification)	BR

(Pregnancy test, see 82996, 82997, 86006–86009)

(86415 and 86416 have been deleted)

(Psittacosis, CF, see 86171)

86421	Radioallergosorbent test (RAST); up to 5 antigens	BR
86422	6 or more antigens	BR
86423	Radioimmunosorbent test (RIST) IgE, quantitative	BR

(Rapid plasma reagin test (RPR), see 86592)

(86424, 86425, 86426, and 86427 have been deleted)

(Rh immune globulin, see 86273)

86430	(Rheumatoid factor)	12.0

(RIST, see 86423)

(RMCT, see 86423)

(RPR, see 86592)

(Rubella, CF, see 86171; HAI, see 86280)

(Schistosomiasis agglutination, see 86006–86009)

(Serologic test for syphilis (STS), see 86171, 86592, 86593)

86455	Skin test; anergy testing, one or more antigens	
86490	coccidioidomycosis	20.0
86510	histoplasmosis	20.0
86540	mumps	20.0

		Unit Value
	(For biopsy see 11100, for microscopic study, see 88304, 88313)	
86580	tuberculosis, intradermal	20.0
86585	tuberculosis, tine test	12.0
	(Skin tests 86450, 86460, 86470, 86480, 86495, 86500, 86520, 86530, 86550, 86565, and 86570 have been deleted)	
	(For skin tests for allergy testing, see 95005–95199, medicine section)	
	(Smooth muscle antibody, see 86255, 86256)	
	(Sporotrichosis, see 86006–86009)	
	(Streptococcus MG, see 86171)	
86590	Streptokinase, antibody	27.0
	(Streptolysis O antibody, see anti–streptolysis O, 86060–86061)	
	(Streptobacillus, see 86008, 86009)	
86592	Syphilis, precipitation or flocculation tests, qualitative VDRL, RPR, DRT	9.0
	(See also 89006, 89007)	
86593	Syphilis, precipitation or flocculation tests, quantitative	15.0
	(Syphilis serology, see also 86171)	
	(Tetanus, see 86280)	
	(Thyroglobulin antibody, see 86006–86009, 86171)	
86594	Thyroid autoantibodies	BR
86595	Tissue; culture	BR
	(86597 tissue typing has been deleted. To report, use 86810–86822)	
86600	Toxoplasmosis dye test	80.0
	(For CF, see 86171; IFA, see 86255, 86256)	
86630	Transfer factor test (TFT)	BR
86650	Treponema antibodies, fluorescent, absorbed (FTA–abs)	30.0
86660	Treponema pallidum immobilization (TPI)	80.0
86662	Treponema pallidum test, other, specify (e.g., TPIA, TPA, TPMB, TPCF, RPCF)	BR
	(Trichinosis, see 86006–86009)	
	(Trypanosomiasis, see 86171, 86280)	
	(Tuberculosis, see 86580, 86585, 87116–87118, 87190)	
	(Vaccinia immune globulin, see 86274)	
	(VDRL, see 86592, 86593)	
	(Viral antibodies, see 86171, 86280, 86382)	
	(Visceral larval migrans, see 86280)	
	(Warm agglutinins, see 86004)	
	(86670 has been deleted)	
86681	Adrenal cortex antibodies, RIA	31.0
86685	Anti–AChR (acetylcholine receptor) antibody titer	BR
86800	Thyroglobulin antibody, RIA	31.0
86810	Tissue typing; for organ transplantation, including pretransplant crossmatch (donor) lymphocyte vs recipient serum for nonspecific antibodies	BR
86812	HLA typing, A, B, or C (e.g., A10, B7, B27), single antigen	BR
86813	HLA typing, A, B, and/or C (e.g., A10, B7, B27), multiple antigens	BR
86816	HLA typing, DR, single antigen	BR
86817	HLA typing, DR, multiple antigen	BR
86821	Lymphocyte culture, mixed (MLC)	BR
86822	Lymphocyte culture, primed (PLC)	BR
86800		BR
86999	Unlisted immunology procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–06–032 (Order 86–19), § 296–23–221, filed 2/28/86, effective 4/1/86; 83–16–066 (Order 83–23), § 296–23–221, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–221, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–221, filed 12/23/80, effective 3/1/81; Order 74–7, § 296–23–221, filed 1/30/74.]

WAC 296–23–224 Microbiology.

		Unit Value
	(Includes bacteriology, mycology, parasitology and virology)	
87001	Animal inoculation, small animal; with observation	36.0
87003	with observation and dissection	45.0
87015	concentration (any type) for parasites, ova or tubercle bacillus (T.B. AFB)	20.0
87040	Culture, bacterial, definitive aerobic; blood (may include anaerobic screen)	48.0
87045	stool	25.0
87060	throat or nose	20.0
87070	any other source	16.0
	(For urine, see 87086–87088)	
87072	Culture, presumptive, pathogenic organisms, by commercial kit, any source except urine (For urine, see 87087)	BR
87075	Culture, bacterial, any source; anaerobic (isolation)	36.0
87076	definitive identification, including	

		Unit Value
	gas chromatography in addition to anaerobic culture	60.0
87081	Culture, bacterial, screening only, for single organisms	15.0
87082	Culture, presumptive, pathogenic organisms, screening only, by commercial kit (specify type); for single organisms	BR
87083	multiple organisms	BR
87084	with colony estimation from density chart (includes throat cultures)	BR
87085	with colony count	BR

(For urine colony count, see 87086)

87086	Culture, bacterial, urine; quantitative, colony count	15.0
87087	commercial kit	12.0
87088	identification, in addition to quantitative or commercial kit	12.0
87101	Culture, fungi, isolation; skin	15.0
87102	other source	18.0
87106	definitive identification, by culture, per organism, in addition to skin or other source	30.0
87109	Culture, mycoplasma, any source	75.0
87116	Culture, tubercle or other acid–fast bacilli (e.g., TB, AFB, mycobacteria); any source, isolation only	18.0
87117	concentration plus isolation	30.0
87118	definitive identification, per organism, (does not include isolation and/or concentration)	30.0
87140	culture, typing fluorescent method each antiserum	20.0
87143	gas liquid chromatography (GLC) method	45.0
87145	phage method	40.0
87147	serological method agglutination grouping, per antiserum	20.0
87151	serologic method, speciation	20.0
87155	precipitin method, grouping, per antiserum	12.0
87158	other methods	20.0
87163	Culture, special extensive definitive diagnostic studies, beyond usual definitive studies	25.0
87164	Dark field examination, any source (e.g., penile, vaginal, oral, skin); includes specimen collection	60.0
87166	without collection	30.0
87173	Endotoxin, bacterial (pyrogens); animal inoculation	36.0
87174	chemical	24.0
87176	homogenization, tissue, for culture	15.0
87177	Ova and parasites, direct smears, concentration and identification	36.0

		Unit Value
	(Individual smears and procedures, see 87015, 87208–87211)	
	(Trichrome, iron hemotoxylin and other special stains, see 88312)	
87181	Sensitivity studies antibiotic, agar diffusion method, per antibiotic	40.0
87184	disc method, per plate (12 or less discs)	24.0
87186	microtiter, minimum inhibitory concentration (MIC), 8 or less antibiotics	45.0
87188	tube dilution method, each antibiotic	30.0
87190	Sensitivity study of tubercle bacillus, (TB, AFB), each drug	60.0
87205	Smear, primary source, with interpretation; routine stain for bacteria, fungi, or cell types	12.0
87206	fluorescent and/or acid fast stain for bacteria, fungi, or cell types	18.0
87207	special stain for inclusion bodies or intracellular parasites (e.g., malaria, kala azar)	24.0
87208	direct or concentrated, dry, for ova and parasites	12.0
	(For concentration, see 87015; complete examination, see 87177)	
	(For complex special stains, see 88312–88313)	
	(For fat, meat, fibers, nasal eosinophils, and starch, see miscellaneous section)	
87210	wet mount with simple stain, for bacteria, fungi, ova, and/or parasites	12.0
87211	wet and dry mount, for ova and parasites	18.0
87220	Tissue examination for fungi (e.g., KOH slide)	BR
87250	Virus, inoculation of embryonated eggs, suitable tissue culture, or small animal, includes observation and dissection	12.0
	(For electron microscopy, see 88348)	
	(For inclusion bodies in tissue sections, see 88304–88309; in smears, see 87207–87210; in fluids, see 88106)	
	(87300 autogenous vaccine has been deleted. To report, use 87999.)	
87999	Unlisted microbiology procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-224, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-224, filed 11/30/81, effective

1/1/82; 81-01-100 (Order 80-29), § 296-23-224, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-224, filed 1/30/74. Formerly WAC 296-23-205.]

WAC 296-23-228 Anatomic pathology.

		Unit Value
	POSTMORTEM EXAMINATION	
	(Procedures 88000 through 88099 represent physician services only. See modifier -90 for outside laboratory services.)	
88000	Necropsy (autopsy) without CNS, gross examination only	400.0
88005	with brain	500.0
88007	with brain and spinal cord	600.0
88012	infant with brain	300.0
88014	stillborn or newborn with brain	300.0
88016	macerated stillborn	400.0
88020	Necropsy (autopsy) without CNS, gross and microscopic examination	800.0
88025	with brain	900.0
88027	with brain and spinal cord	1000.0
88028	infant with brain	700.0
88029	stillborn or newborn with brain	700.0
88036	Necropsy (autopsy), limited, gross and/or microscopic; regional	BR
88037	single organ	BR+
88040	Necropsy (autopsy); forensic examination	BR
88045	coroner's call	BR
88099	Unlisted necropsy (autopsy) procedure	BR
	CYTOPATHOLOGY	
88104	Cytopathology, fluids, washings or brushings, with centrifugation except cervical or vaginal; smears with interpretation	45.0
88106	filter method only with interpretation	45.0
88107	smears and filter preparation with interpretation	60.0
88108	concentration technique, smears and interpretation (e.g., Saccomanno technique)	BR
	(88109 has been deleted. For interpretation of smear, use 88104; for cell block interpretation, see 88304, 88305)	
	(For cervical or vaginal smears, see 88150)	
	(For cell block only, see 88302)	
	(For gastric intubation with lavage, see 89130-89141, 91055)	
	(For x-ray localization, see 74340)	
88125	Cytopathology, forensic (e.g., sperm)	75.0
88130	Sex chromatin identification; (Barr bodies)	40.0
88140	peripheral blood smear, polymorphonuclear "drum sticks"	40.0
	(For guard stain, see 88313)	
88150	Cytopathology, smears, cervical or vaginal (e.g., Papanicolaou), screening and interpretation, up to three smears;	26.5
88155	with definitive hormonal evaluation (e.g., maturation index, karyopyknotic index, estrogenic index)	40.0
88160	Cytopathology, any other source (e.g., sputum), screening and interpretation	36.0
88161	preparation, screening and interpretation	BR
88162	extended study involving over 5 slides and/or multiple stains	BR
	(For obtaining specimen, see percutaneous needle biopsy under individual organ in surgery)	
	(For aerosol collection of sputum, see 89350)	
	(For special stains, see 88312, 88313)	
88170	Fine needle aspiration with or without preparation of smears; superficial tissue (e.g., thyroid, breast, prostate)	BR
88171	deep tissue under radiologic guidance	BR
	(For CT guidance, see 76360, 76361; for ultrasonic guidance, see 76942, 76943; for fluoroscopic guidance use 76000)	
88172	Evaluation of fine needle aspirate with or without preparation of smears; immediate cytohistologic study to determine adequacy of specimen(s)	BR
88173	interpretation and report	BR
88199	Unlisted cytopathology procedure	BR
	(For electron microscopy, see 88348, 88349)	
	CYTOGENETIC STUDIES	
88260	Chromosome analysis; lymphocytes, count 1-4 cells, screening	180.0
88261	count 1-4 cells, 1 karyotype	375.0
88262	count 1-20 cells for mosaicism, 2 karyotypes	525.0
88265	Chromosome analysis; myeloid cells, 2 karyotypes (Philadelphia chromosome)	225.0
88267	amniotic fluid, count 1-4 cells, 1 karyotype	600.0
88268	skin, count 1-4 cells, 1 karyotype	600.0
88270	other tissue cells, count 1-4 cells, 1 karyotype	BR
88280	additional karyotyping, each study	75.0
88285	additional cells counted, each study	15.0
88299	Unlisted cytogenetic study	BR

		Unit Value
	SURGICAL PATHOLOGY	
	(Procedures 88300 through 88399 include accession, handling and reporting)	
88300	Surgical pathology, gross examination only	20.0

NOTE:
Only one of the numbers 88302–88309 should be used in reporting specimens (single or multiple) that are removed during a single surgical procedure.

88302	Surgical pathology, gross and microscopic examination of presumptively normal tissue(s), for identification and record purposes	60.0
88304	Surgical pathology, gross and microscopic examination of presumptively abnormal tissue(s); uncomplicated specimen	75.0
88305	single complicated or multiple uncomplicated specimen(s), without complex dissection	105.0
88307	multiple complicated specimens	150.0
88309	complex diagnostic problem with or without extensive dissection	BR
	(For fine needle aspiration, preparation, and interpretation of smears, see 88170–88173)	
88311	decalcification procedure. (List separately in addition to code for surgical pathology examination)	12.0
88312	Special stains; Group I for microorganisms, (e.g., Gridley, acid fast, methenamine silver), each	25.0
88313	Group II, all other (e.g., iron, trichrome), except immunocytochemistry and immunoperoxidase stains, each	12.0
	(For immunocytochemistry and immunoperoxidase tissue studies, use 88342)	
88314	Histochemical staining with frozen section(s)	BR
	(88316 preparation of duplicate slides has been deleted. To report, use 99070)	
88317	Interpretation and report by treating physician of previously diagnosed histologic slide (without consultation)	BR
88318	Determinative histochemistry to identify chemical components (e.g., copper, zinc)	BR
88319	Determinative histochemistry to identify enzyme constituents	BR
88321	consultation and report on referred slides prepared elsewhere	140.0
88323	Consultation and report on referred material requiring preparation of slides	BR
88325	Consultation, comprehensive, with review of records and specimens, with report on referred material	BR
88329	consultation during surgery	100.0
88331	with frozen section(s), single specimen	90.0
88332	each additional tissue block with frozen section(s)	30.0
88342	Immunocytochemistry (including tissue immunoperoxidase), each antibody	BR
	(88345 has been deleted. To report, use 88346)	
88346	Immunofluorescent study, each antibody	BR
88348	Electron microscopy; diagnostic	BR
88349	scanning	BR
	(88360 whole organ sections has been deleted. To report use 88399)	
	(88370 has been deleted. To report, use 88342)	
	(For physician interpretation of peripheral blood smear, use 85060)	
88399	Unlisted surgical pathology procedure	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-228, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-228, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-228, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-228, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-228, filed 1/30/74. Formerly WAC 296-23-240.]

WAC 296-23-232 Miscellaneous.

		Unit Value
	(Basal metabolic rate has been deleted. If necessary to report, use 89399)	
	(89005–89007 have been deleted)	
89050	Cell count, miscellaneous body fluids (except blood) (e.g., CSF, joint fluid, etc.)	12.0
89051	with differential count	20.0
	(89070 has been deleted)	
	(89080 has been deleted)	
89100	Duodenal intubation and aspiration single specimen (e.g., simple bile study or afferent loop culture) plus appropriate test procedure	40.0
89105	collection of multiple fractional specimens, with pancreatic or gallbladder stimulation, single or double lumen tube	BR

		Unit Value
	(For chemical analyses, see Chemistry and Toxicology)	
	(For electrocardiogram, see 93000–93279)	
	(For radiological localization, see 74340)	
	(Esophagus acid perfusion test (Bernstein), see 91030)	
89125	Fat stain, feces, urine, sputum	15.0
89130	Gastric intubation and aspiration diagnostic, each specimen, for chemical analyses or cytopathology;	20.0
89132	after stimulation	45.0
89135	Gastric intubation, aspiration, and fractional collections; for one hour (e.g., gastric secretory study)	60.0
89136	two hours	90.0
89140	two hours including gastric stimulation (e.g., histalog, pentagastrin) ..	105.0
89141	three hours, including gastric stimulation	120.0
	(For gastric lavage, therapeutic, see 96150)	
	(For radiologic localization of gastric tube, see 74340)	
	(For chemical analyses, see 82926–82932)	
	(For joint fluid chemistry, see Chemistry and Toxicology, this section)	
89160	Meat fibers, feces	12.0
	(89180 has been deleted. To report, use 89190)	
89190	Nasal smear for eosinophils	
89205	Occult blood, any source except feces	10.5
	(Occult blood, feces, see 82270)	
	(Paternity tests, see 86385, 86386)	
	(89210 has been deleted)	
89300	Semen analysis, presence and/or sperm motility including Huhner test.	12.0
89310	motility and count	40.0
89320	complete (volume, count, motility and differential)	80.0
	(For skin test, see 86455–86585 and 95005–95199)	
89323	Sperm immobilization	BR
89325	Sperm agglutination, with antibody titer	BR
	(For medicolegal identification of sperm, see 88125)	
	(For complete spinal fluid examination, see 89070)	
	(89345 has been deleted)	
89350	Sputum, obtaining specimen, aerosol induced technique (separate procedure)	20.0
89355	Starch granules, feces	10.5
89360	Sweat test by iontophoresis	50.0
	(For chloride and sodium analysis, see 82437, 84295)	
	(Tissue culture, see 86595)	
	(Tissue typing, see 86810–86822)	
89365	Water load test	BR
89399	Unlisted miscellaneous pathology test	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-232, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-232, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-232, filed 1/30/74.]

HOSPITAL

WAC 296-23-300 General statement. Hospital services will be paid when necessary for treatment of the accepted condition. General information and rules pertaining to the care of injured workers are explained in the section beginning WAC 296-20-010 through 296-20-17003.

Per WAC 296-20-075, the department or self-insurer will pay for hospital inpatient admission for bed rest, physical therapy and/or administration of injectable drugs only under the conditions specified.

There is often delay in processing hospital bills because the claim number is not listed in the space provided on the bill form. If you are not able to secure the claim number from the injured worker or the attending doctor, you should obtain the claim number from the department in Olympia. Self-insurers may be contacted directly to obtain claim numbers on self-insured claims. See Appendix B for list of self-insured employers.

Please make arrangements with the attending doctor in your area to supply you with the claim number when arrangements are made for hospitalization and/or outpatient services. Do not confuse the date of injury with the date of admission or service.

We urge you to submit your bills to the department or self-insurer at the end of each month for the services rendered during that month.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-300, filed 10/1/86, effective 11/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-300, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-300, filed 11/28/75, effective 1/1/76; Order 68-7, § 296-23-300, filed 11/27/68, effective 1/1/69.]

HOSPITAL RULES

WAC 296-23-301 Rates for daily and ancillary services. The department or self-insurer will pay for daily and ancillary services by multiplying allowed charges times the ratio of total rate setting revenue minus bad debt to total rate setting revenue for each hospital set annually based upon the latest available budget approved by the Washington state hospital commission.

Beginning November 1, 1986, hospital outpatient pathology, radiology, and physical therapy services are to be billed and will be paid using appropriate fee schedule procedure codes. Doctor services are *not* included in WSHC rates and should be billed using appropriate fee schedule procedure codes.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-301, filed 10/1/86, effective 11/1/86; 86-04-035 (Order 86-15), § 296-23-301, filed 1/30/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-301, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-301, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-301, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-301, filed 11/28/75, effective 1/1/76.]

WAC 296-23-305 Questionable beneficiary. It is the responsibility of the hospital to try to determine at the time of admission if the injured worker is covered under the Industrial Insurance Act and if the hospitalization is for an industrial condition.

In cases where a worker with a questionable industrial injury has paid the hospital and it is subsequently determined that the worker should have been covered by industrial insurance, the hospital must bill the department for services rendered and refund to the worker the full amount collected from him.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-305, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-305, filed 11/24/76, effective 1/1/77; Order 70-12, § 296-23-305, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-305, filed 11/27/68, effective 1/1/69.]

WAC 296-23-310 Refund of incorrect payments. When the department or self-insurer has paid a hospital billing and it is later determined that the service performed was not the responsibility of the department or self-insurer, the department or self-insurer must be refunded immediately. The department or self-insurer will deduct from future HOSPITAL PAYMENTS if the hospital does not refund.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-310, filed 12/23/80, effective 3/1/81; Order 68-7, § 296-23-310, filed 11/27/68, effective 1/1/69.]

WAC 296-23-315 Treatment of unrelated conditions. Treatment or surgery for unrelated conditions, while the injured workman is hospitalized are not usually allowed. When such unrelated treatment is permitted by the department or self-insurer, the requesting doctor must identify which services are needed due to the industrial injury and which are needed due to the unrelated conditions. Diagnostic tests and/or treatment for unrelated conditions directly affecting recovery of the industrial condition may be given consideration as outlined under WAC 296-20-055.

Diagnostic tests and studies ordered by the attending physician as a part of the initial care and diagnosis of an industrial injury, will be allowed.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-315, filed 8/2/83; Order 70-12, § 296-23-315, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-315, filed 11/27/68, effective 1/1/69.]

WAC 296-23-330 Closed claims. The department or self-insurer will not pay for services rendered after the claim has been closed. If responsibility is later accepted by the department or self-insurer, WAC 296-23-305 will apply.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-330, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-330, filed 1/30/74; Order 70-12, § 296-23-330, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-330, filed 11/27/68, effective 1/1/69.]

WAC 296-23-335 RX's take home. Take home prescriptions will be authorized upon discharge of the patient if the medication is necessary for the industrial condition. Copies of prescription must be attached to billings.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-335, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-335, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-335, filed 11/28/75, effective 1/1/76; Order 68-7, § 296-23-335, filed 11/27/68, effective 1/1/69.]

WAC 296-23-340 Routine laboratory procedures on admission. On admission of an industrially injured patient to a hospital, the department or the self-insurer will allow routine laboratory work-up consisting of a complete blood count or hematocrit, urinalysis, serology and routine admission chemical screening procedure. LABORATORY REPORTS FOR THE PROCEDURES ACCOMPLISHED MUST ACCOMPANY THE BILL.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-340, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-340, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-340, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-340, filed 11/22/74, effective 1/1/75; Order 68-7, § 296-23-340, filed 11/27/68, effective 1/1/69.]

WAC 296-23-356 Billing procedures. (1) Bills for hospital services must be submitted on UB-82 bill forms following the billing instructions provided by the Washington state hospital association. The self-insurer may accept other bill forms. Regardless of form used, the following information must appear: Claim number, claimant name and address, worker's social security number (if available), employer name, date of injury, diagnosis including ICD-9-CM code(s), nature of injury, date of service, and description of service rendered with the appropriate ICD-9-CM or CPT-4 procedure code(s). Summarize charges by revenue codes as specified in the UB-82 instructions. Itemized detail of summary charges must be attached.

(2) For a bill to be considered for payment, it should be received by the department or self-insurer within ninety days from the date of service.

(3) Supporting documentation of services rendered must be attached to billings. The reports needed are:

(a) X-ray findings
(b) Laboratory findings
(c) Diagnostic study findings
(d) Emergency room reports
(e) Admission history and physical
(f) Discharge summary for stays over 48 hours
(g) Operative report

(h) Physical therapy notes
(i) Occupational therapy notes.

(4) The department or the self-insurer may reject bills for services rendered in violation of the medical aid rules.

(5) The emergency room will be considered the office for those physicians providing regular emergency room care to the hospital, and fees will be allowed on this basis.

(6) Call back between 6 p.m. and 8 a.m. provided that laboratory, x-ray and surgical staff are normally not on duty during this period of time will be billed at commission approved rates.

(7) The claim number must be placed on each bill and on each page of attached documents in the upper right hand corner.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-356, filed 10/1/86, effective 11/1/86; 83-16-066 (Order 83-23), § 296-23-356, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-356, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-356, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-356, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-356, filed 12/1/77; Emergency Order 77-16, § 296-23-356, filed 9/6/77; Order 76-34, § 296-23-356, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-356, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-356, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-356, filed 1/30/74; Order 71-6, § 296-23-356, filed 6/1/71; Order 70-12, § 296-23-356, filed 12/1/70, effective 1/1/71. Formerly WAC 296-23-355 (part).]

WAC 296-23-357 X-rays. (1) X-rays should not be sent to the department or self-insurer unless requested for comparison and interpretation in determining permanent disability, other administrative or legal decisions, and for cases in litigation. X-rays must be retained for a period of ten years by the hospital.

(2) X-rays must be made available upon request to consultants, to medical examiners, to the department, to self-insurers and/or the board of industrial insurance appeals.

(3) If a hospital ceases to function as an acute care facility, department approved custodial arrangements must be made to insure availability of x-rays on request.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-357, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-357, filed 12/23/80, effective 3/1/81; Order 77-27, § 296-23-357, filed 11/30/77, effective 1/1/78; Emergency Order 77-26, § 296-23-357, filed 12/1/77; Emergency Order 77-16, § 296-23-357, filed 9/6/77; Order 76-34, § 296-23-357, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-357, filed 1/30/74.]

DENTAL

WAC 296-23-412 General information and instructions. (1) The department or self-insurer is responsible only for repair or replacement of teeth injured or prosthodontics broken as a result of an industrial injury.

(2) Information pertaining to industrial claims is explained in WAC 296-20-010.

(3) Information pertaining to reports of accident is outlined in WAC 296-20-025.

(4) Information pertaining to the care of injured workers is explained in WAC 296-20-110.

(5) An estimate of cost is not needed prior to authorization of dental work unless indicated due to the extensive nature of the dental work. The department or self-insurer reserves the right to review all charges billed.

(6) Billing instructions are listed in WAC 296-20-125. Bills for services must be itemized, specifying tooth numbers and materials used. No services will be paid on rejected or closed claims except those rendered in conjunction with a reopening application.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-412, filed 8/2/83.]

WAC 296-23-421 Diagnostic services.

00100	CLINICAL ORAL EXAMINATIONS
00110	Initial oral examination
00120	Periodic oral examination
00130	Emergency oral examination
00200	RADIOGRAPHS
00210	Intraoral—complete series (including bitewings)
00220	Intraoral periapical—single, first film
00230	Intraoral periapical—each additional film
00240	Intraoral—occlusal, film
00250	Extraoral—single, first film
00260	Extraoral—each additional film
00270	Bitewing—single film
00272	Bitewing—two films
00273	Bitewings—three films
00274	Bitewing—four films
00290	Posteroanterior and lateral skull and facial bone survey film
00310	Sialography
00321	Temporomandibular joint, film
00330	Panoramic—maxilla and mandible film
00340	Cephalometric film
00400	TESTS AND LABORATORY EXAMINATIONS
00410	Bacteriologic cultures for determination of pathologic agents
00420	Caries susceptibility tests
00450	Histopathologic examination
00470	Diagnostic casts
00471	Diagnostic photographs.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-421, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-421, filed 8/2/83.]

WAC 296-23-430 Preventive services.

01100	DENTAL PROPHYLAXIS
01110	Adults
01120	Children
01200	FLUORIDE TREATMENTS
01201	Topical application of fluoride (including prophylaxis)—children
01210	Topical application of sodium fluoride-4 treatments excluding prophylaxis

01211 Topical application of sodium fluoride–4 treatments including prophylaxis
01220 Topical application of stannous fluoride–1 treatment excluding prophylaxis
01221 Topical application of stannous fluoride–1 treatment including prophylaxis
01230 Topical application of acid fluoride phosphate–1 treatment excluding prophylaxis
01231 Topical application of acid fluoride phosphate–1 treatment including prophylaxis

01300 OTHER PREVENTIVE SERVICES

01310 Dietary planning for the control of dental caries
01330 Oral hygiene instruction
01340 Training in preventive dental care
01350 Topical application of sealants—per quadrant

01500 SPACE MANAGEMENT THERAPY

01510 Fixed—unilateral type.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-430, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-430, filed 8/2/83.]

WAC 296-23-440 Restorative services.

02100 AMALGAM RESTORATIONS (INCLUDING POLISHING)

02110 Amalgam—one surface, deciduous
02120 Amalgam—two surfaces, deciduous
02130 Amalgam—three surfaces, deciduous
02131 Amalgam—four surfaces, deciduous
02140 Amalgam—one surface, permanent
02150 Amalgam—two surfaces, permanent
02160 Amalgam—three surfaces, permanent
02161 Amalgam—four or more surfaces, permanent
02190 Pin retention—exclusive of amalgam

02200 SILICATE RESTORATIONS

02210 Silicate cement per restoration

02300 ACRYLIC OR PLASTIC OR COMPOSITE RESTORATIONS

02310 Acrylic or plastic or composite resin
02330 Composite resin—one surface
02331 Composite resin—two surfaces
02332 Composite resin—three surfaces
02333 Composite resin—four surfaces
02334 Pin retention—exclusive of composite resin
02335 Acrylic or plastic or composite resin (involving incisal angle)
02340 Acid etch for restorations

02400 GOLD FOIL RESTORATIONS

02410 Gold foil—one surface

02500 GOLD INLAY RESTORATIONS

02510 Inlay—gold, one surface
02520 Inlay—gold, two surfaces
02530 Inlay—gold, three surfaces
02540 Onlya [onlay]—per tooth (in addition to foregoing)

02600 PORCELAIN RESTORATIONS

02610 Inlay—porcelain

02700–02899 CROWNS—SINGLE RESTORATIONS ONLY

02710 Crown plastic (acrylic)
02711 Crown plastic—prefabricated
02720 Plastic with gold
02721 Crown plastic with nonprecious metal
02722 Crown plastic with semi-precious metal
02740 Porcelain
02750 Porcelain with gold
02751 Crown porcelain with nonprecious metal
02752 Crown porcelain with semi-precious metal
02790 Gold (full cast)
02791 Crown nonprecious metal (full cast)
02792 Semi-precious metal (full cast)
02810 Gold (3/4 cast)
02830 Prefabricated stainless steel—primary
02840 Crown—temporary (fractured tooth)
02891 Cast post and core in addition to crown
02892 Prefabricated post and core in addition to crown

02900 OTHER RESTORATIVE SERVICES

02910 Recement inlays
02920 Recement crowns
02940 Fillings (sedative)
02950 Crown buildup, pin retained.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-440, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-440, filed 8/2/83.]

WAC 296-23-450 Endodontics.

03100 PULP CAPPING

03110 Pulp cap—direct (excluding final restoration)
03120 Pulp cap—indirect (excluding final restoration)

03200 PULPOTOMY (EXCLUDING FINAL RESTORATION)

03220 Vital pulpotomy

03300 ROOT CANAL THERAPY (INCLUDES TREATMENT PLAN, CLINICAL PROCEDURES, AND FOLLOW-UP CARE)

03310 Anterior (excludes final restoration)
03320 Bicuspid (excludes final restoration)
03330 Molar (excludes final restoration)
03350 Apexification (treatment may extend over period of 6 to 18 months

03400 PERIAPICAL SERVICES

03410 Apicoectomy—performed as separate surgical procedure (per root)
03420 Apicoectomy—performed in conjunction with endodontic procedure (per root)
03430 Retrograde filling
03440 Apical curettage
03450 Root resection
03460 Endodontic implants

03900 OTHER ENDODONTIC PROCEDURES

03910 Surgical procedure for isolation of tooth with rubber dam
03920 Hemisection
03940 Recalcification of perforations
03950 Canal preparation and fitting of preformed dowel or post
03960 Bleaching of nonvital discolored tooth.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-450, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-450, filed 8/2/83.]

WAC 296-23-460 Periodontics.

Includes all necessary diagnostic, surgical and adjunctive services:

1 All necessary diagnostic procedures
2 Training in personal preventive dental care
3 Mouth preparation procedures
4 Routine finishing procedures
5 Post-treatment evaluation
6 Occlusal adjustment (if necessary)
7 Surgical procedures including curettage, gingivectomy, flap entry, osseous procedures and complex techniques

04200 SURGICAL SERVICES (INCLUDING THE USUAL POST-OPERATIVE SERVICES)

04210 Gingivectomy or gingivoplasty—per quadrant
04220 Gingival curettage—per quadrant
04240 Gingival flap procedure
04250 Mucogingival surgery—per quadrant
04260 Osseous surgery (including flap entry and closure)—per quadrant
04261 Osseous graft—single site (including flap entry, closure, and donor site)
04262 Osseous graft—multiple sites (including flap entry, closure, and donor site)
04270 Pedicle soft tissue grafts
04271 Free soft tissue grafts (including donor site)
04272 Vestibuloplasty
04280 Periodontal pulpal procedures

04300 ADJUNCTIVE PERIODONTAL SERVICES (IN CONJUNCTION WITH TOTAL PERIODONTAL TREATMENT)

04320 Provisional splinting-intracoronal
04321 Provisional splinting-extracoronal
04330 Occlusal adjustment (limited)
04331 Occlusal adjustment (complete)
04340 Periodontal scaling and root planing (entire mouth)
04341 Periodontal scaling and root planing—per quadrant (fewer than 12 teeth)
04350 Tooth movement for periodontal purposes (by report)
04360 Special periodontal appliances (including occlusal guards) (by report)
04370 Case pattern modifiers (by report)
04500 Gingivitis—diagnosis and/or treatment of
04600 Early periodontitis—diagnosis and/or treatment of
04700 Moderate periodontitis—diagnosis and/or treatment of
04800 Advanced periodontitis—diagnosis and/or treatment of

04900 OTHER PERIODONTIC SERVICES

04910 Preventive periodontal procedures (periodontal prophylaxis)
04920 Unscheduled dressing change (by other than treating dentist).

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-460, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-460, filed 8/2/83.]

WAC 296-23-470 Prosthodontics, removable--Including routine postdelivery care.

05100 COMPLETE DENTURES—INCLUDING SIX MONTHS POSTDELIVERY

05110 Complete upper
05120 Complete lower
05130 Immediate upper
05140 Immediate lower

05200 PARTIAL DENTURES—INCLUDING ROUTINE POSTDELIVERY CARE

05211 Upper, excluding clasps, acrylic base
05212 Lower, excluding clasps, acrylic base
05213 Upper—cast chrome base, with acrylic saddles, excluding clasps
05214 Lower—cast chrome base, with acrylic saddles, excluding clasps
05215 Partial upper denture—with two gold clasps with rests, acrylic base
05216 Partial upper denture—with two chrome clasps with rests, acrylic base
05217 Partial lower denture—with two gold clasps with rests, acrylic base
05218 Partial lower denture—with chrome clasps with rests, acrylic base
05230 Partial lower denture—with gold lingual bar and two clasps, acrylic base
05231 Partial lower denture—with chrome lingual bar and two clasps, acrylic base
05240 Partial lower denture—with gold lingual bar and two clasps, cast base

05241 Partial lower denture—with chrome lingual bar and two clasps, cast base
05250 Partial upper denture—with gold bar and two clasps, acrylic base
05251 Partial upper denture—with chrome palatal bar and two clasps, acrylic base
05260 Partial upper denture—with gold palatal bar and two clasps, cast base
05261 Partial upper denture—with chrome paletal [palatal] bar and two clasps, cast base
05280 Removable unilateral partial denture—one piece gold casting, clasp attachments, per unit including pontics
05281 Removable unilateral partial denture—one piece chrome casting, clasp attachments, per unit including pontics
05291 Full cast upper partial—with two gold clasps
05292 Full cast upper partial—with two chrome clasps
05293 Full cast lower partial—with two gold clasps
05294 Full cast lower partial—with two chrome clasps

05300 ADDITIONAL UNITS FOR PARTIAL DENTURES

05310 Each clasp with rest
05320 Each tooth

05400 ADJUSTMENT TO DENTURES

05410 Adjustment to complete denture
05421 Adjustment to upper partial denture
05422 Adjustment to lower partial denture

05600 REPAIRS TO DENTURES

05610 Repair broken complete or partial denture—no teeth damaged
05620 Repair broken complete or partial denture—replace one broken tooth
05630 Replace additional teeth—each tooth
05640 Replace broken tooth on denture—no other repairs
05650 Adding tooth to partial denture to replace extracted tooth—each tooth (not involving clasp or abutment tooth)
05660 Adding tooth to partial denture to replace extracted tooth—each tooth (involving clasp or abutment tooth)
05670 Reattaching damaged clasp on denture
05680 Replacing broken clasp with new clasp on denture
05690 Replacing each additional cast with rest

05700 DENTURE DUPLICATION

05710 Duplicate upper or lower complete denture
05720 Duplicate upper or lower partial denture

DENTURE RELINING

05730 Relining upper or lower complete dentures (office reline)
05740 Relining upper or lower partial denture (in office)
05750 Relining upper or lower complete denture (laboratory)
05760 Relining upper or lower partial denture (in laboratory)

05800 OTHER PROSTHETIC SERVICES

05810 Temporary upper denture (complete)
05811 Temporary lower denture (complete)
05820 Temporary upper denture (partial stayplate)
05821 Temporary lower denture (partial stayplate)
05830 Obturator for surgically excised palatal tissue
05840 Obturator for deficient velopharyngeal function (cleft palate)
05850 Tissue conditioning
05860 Overdenture complete (by report)
05861 Overdenture partial (by report).

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-470, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-470, filed 8/2/83.]

WAC 296-23-480 Prosthodontics, fixed.

06200 BRIDGE PONTICS

06210 Cast gold
06211 Bridge pontic, cast nonprecious
06212 Bridge pontic, cast semiprecious
06220 Slotted facing
06230 Slotted pontic
06235 Pin facing
06240 Porcelain fused to gold
06241 Porcelain fused to nonprecious metal
06242 Porcelain fused to semiprecious metal
06250 Plastic processed to gold
06251 Plastic processed to nonprecious metal
06252 Plastic processed to semiprecious metal

06500 RETAINERS

06520 Retainer—gold inlay—two surfaces
06530 Retainer—gold inlay—three or more surfaces
06540 Retainer—gold inlay (onlaying cusps)

06600 REPAIRS

06610 Replace broken pin facing with slotted or other facing
06620 Replace broken facing where post is intact
06630 Replace broken facing where post backing is broken
06640 Replace broken facing with acrylic
06650 Replace broken pontic

06700 CROWNS

06720 Plastic processed to gold
06721 Plastic processed to nonprecious metal
06722 Plastic processed to semiprecious metal
06740 Porcelain
06750 Porcelain fused to gold
06751 Porcelain to nonprecious metal crown/bridge
06752 Porcelain fused to semiprecious metal
06760 Reverse pin facing and metal
06780 Gold (3/4 cast)
06790 Gold (full cast)
06791 Nonprecious metal (full cast)
06792 Semiprecious metal (full cast)

06900 OTHER PROSTHETIC SERVICES

06930 Recement bridge.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-480, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-480, filed 8/2/83.]

WAC 296-23-485 Orthodontics.

PREVENTIVE TREATMENT PROCEDURES

08100 MINOR TREATMENT FOR TOOTH GUIDANCE

08110 Removable appliance therapy
08120 Fixed or cemented appliance therapy

08200 MINOR TREATMENT TO CONTROL HARMFUL HABITS

08210 Removable appliance therapy
08220 Fixed or cemented appliance therapy

08350 INTERCEPTIVE ORTHODONTIC TREATMENT

08360 Removable appliance therapy
08370 Fixed appliance therapy

COMPREHENSIVE ORTHODONTIC TREATMENT

08450 TREATMENT OF THE TRANSITIONAL DENTITION

08460 Class I malocclusion
08470 Class II malocclusion
08480 Class III malocclusion

08550 TREATMENT OF THE PERMANENT DENTITION

08560 Class I malocclusion
08570 Class II malocclusion
08580 Class III malocclusion

08650 Treatment of the atypical or extended skeletal case
08750 Post-treatment stabilization.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-485, filed 2/28/86, effective 4/1/86.]

WAC 296-23-490 Oral surgery.

07100 EXTRACTIONS—INCLUDES LOCAL ANESTHESIA AND ROUTINE POSTOPERATIVE CARE

07110 Single tooth
07120 Each additional tooth

07200 SURGICAL EXTRACTIONS—INCLUDES LOCAL ANESTHESIA AND ROUTINE POSTOPERATIVE CARE

07210 Surgical removal of erupted tooth, requires elevation of mucoperiosteal flap and removal of bone and/or section of tooth
07220 Impaction that requires incision of overlying soft tissue and the removal of the tooth
07230 Impaction that requires incision of overlying soft tissue, elevation of a flap, and either removal of bone and tooth or sectioning and removal of the tooth
07240 Impaction that requires incision of overlying soft tissue, elevation of a flap, removal of bone, and sectioning of the tooth for removal
07241 Impaction requiring incision of overlying soft tissue, elevation of a flap, removal of bone, sectioning of tooth for removal and/or presents unusual difficulties and circumstances
07250 Root recovery (surgical removal of residual root)
07260 Oral antral fistula closure and/or antral root recovery

OTHER SURGICAL PROCEDURES

07270 Tooth replantation
07271 Tooth implantation
07272 Tooth transplantation
07280 Surgical exposure of impacted or unerupted tooth for orthodontic reasons—including wire attachment when indicated
07281 Surgical exposure of impacted or unerupted tooth to aid eruption
07285 Biopsy of oral tissue (hard)
07286 Biopsy of oral tissue (soft)
07290 Surgical repositioning of teeth

07300 ALVEOLOPLASTY (SURGICAL PREPARATION OF RIDGE FOR DENTURES)

07310 Per quadrant—in conjunction with extractions
07320 Per quadrant—not in conjunction with extractions

STOMATOPLASTY—including revision of soft tissue on ridges, muscle reattachment, tongue, palate, and other oral soft tissues

07340 Stomatoplasty per arch—uncomplicated
07350 Stomatoplasty per arch—complicated

07400 SURGICAL EXCISION—reactive inflammatory lesions (scar tissue or localized congenital lesions)

07410 Radical excision—scar or lesion up to 1.25 cm

07420 Radical excision—scar or lesion over 1.25 cm

07425 Excision pericoronal gingiva

EXCISION OF TUMORS

07430 Excision of benign tumor—lesion diameter up to 1.25 cm

07431 Excision of benign tumor—lesion diameter over 1.25 cm

07440 Excision of malignant tumor—lesion diameter up to 1.25 cm

07441 Excision of malignant tumor—lesion diameter over 1.25 cm

REMOVAL OF CYSTS AND NEOPLASMS

07450 Removal of odontogenic cyst or tumor—up to 1.25 cm in diameter

07451 Removal of odontogenic cyst or tumor—over 1.25 cm in diameter

07460 Removal of nonodontogenic cyst or tumor—up to 1.25 cm in diameter

07461 Removal of nonodontogenic cyst or tumor—over 1.25 cm in diameter

07465 Destruction of lesions by physical methods: electro-surgery, chemotherapy, cryotherapy

EXCISION OF BONE TISSUE

07470 Removal of exostosis—maxilla or mandible

07480 Partial ostectomy (guttering or saucerization)

07490 Radical resection of mandible with bone graft

07500 SURGICAL INCISION

07510 Incision and drainage of abscess—intraoral

07520 Incision and drainage of abscess—extraoral

07530 Removal of foreign body, skin or subcutaneous areolar tissue

07540 Removal of reaction—producing foreign bodies musculoskeletal system

07550 Sequestrectomy for osteomyelitis

07560 Maxillary sinusotomy for removal of tooth fragment or foreign body

07600 TREATMENT OF FRACTURES—simple

07610 Maxilla—open reduction—teeth immobilized (if present)

07620 Maxilla—closed reduction—teeth immobilized (if present)

07630 Mandible—open reduction—teeth immobilized (if present)

07640 Mandible—closed reduction—teeth immobilized (if present)

07650 Malar and/or zygomatic arch—open reduction

07660 Malar and/or zygomatic arch—closed reduction

07670 Alveolus—stabilization of teeth—open reduction splinting

07680 Facial bones—complicated reduction with fixation and multiple surgical approaches

07700 TREATMENT OF FRACTURES—compound

07710 Maxilla—open reduction

07720 Maxilla—closed reduction

07730 Mandible—open reduction

07740 Mandible—closed reduction

07750 Malar and/or zygomatic arch—open reduction

07760 Malar and/or zygomatic arch—closed reduction

07770 Alveolus—stabilization of teeth—open reduction splinting

07780 Facial bones—complicated reduction with fixation and multiple surgical approaches

07800 REDUCTION OF DISLOCATION AND MANAGEMENT OF OTHER TEMPOROMANDIBULAR JOINT DYSFUNCTIONS

07810 Open reduction of dislocation—temporomandibular joint

07820 Closed reduction of dislocation—temporomandibular joint

07830 Manipulation under anesthesia—temporomandibular joint

07840 Condylectomy—temporomandibular joint

07850 Meniscectomy—temporomandibular joint

07860 Arthrotomy—temporomandibular joint

07870 Arthrocentesis—temporomandibular joint

07900 OTHER ORAL SURGERY

REPAIR OF TRAUMATIC WOUNDS

07910 Suture of recent small wounds up to 5 cm

COMPLICATED SUTURING

07911 Up to 5 cm

07912 Over 5 cm

07920 Skin grafts (identify defect covered, location and type of graft)

OTHER REPAIR PROCEDURES

07930 Injection of trigeminal nerve branches for destruction

07931 Avulsion of trigeminal nerve branches

07940 Osteoplasty (that is, for orthognathic deformities)

07950 Osseous, osteoperiosteal, periosteal, or cartilage graft of the mandible—autogenous or nonautogenous

07955 Repair of maxillofacial soft and hard tissue defects

07960 Frenulectomy—separate procedure (frenectomy or frenotomy)
07970 Excision of hyperplastic tissue—per arch
07980 Sialolithotomy
07981 Excision of salivary gland
07982 Sialodochoplasty
07983 Closure of salivary fistula
07990 Emergency tracheotomy.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-490, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-490, filed 8/2/83.]

WAC 296-23-495 Adjunctive general services, anesthesia and professional consultation.

UNCLASSIFIED TREATMENT

09110 Palliative (emergency) treatment of dental pain, minor procedures

09200 ANESTHESIA

09210 Local (not in conjunction with operative or surgical procedures)
09211 Regional block anesthesia
09212 Trigeminal division block
09220 General anesthesia
09230 Analgesia

09300 PROFESSIONAL CONSULTATION—DIAGNOSTIC SERVICE PROVIDED BY PHYSICIAN OR DENTIST OTHER THAN PRACTITIONER PROVIDING TREATMENT

09310 Consultation—per session

09400 PROFESSIONAL VISITS

09410 House calls
09420 Hospital calls
09430 Office visit—during regularly scheduled office hours (no operative service performed)
09440 Office visit—after regularly scheduled office hours (no operative service performed)

09600 DRUGS

09610 Therapeutic drug injection (by report)
09630 Other drugs and/or medicaments (by report)

09900 MISCELLANEOUS SERVICES

09910 Application of desensitizing medicaments
09930 Complications (post-surgical—unusual circumstances) (by report)
09950 Occlusion analysis (mounted case)
09960 Completion of claim form
09999 Unspecified (by report to be described by statement of attending dentist).

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-495, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-495, filed 8/2/83.]

MISCELLANEOUS SERVICES AND APPLIANCES

WAC 296-23-500 Miscellaneous services and appliances. The department or self-insurer will approve certain miscellaneous services and appliances needed as the result of an industrial accident. Nursing care, attendant care, transportation, medical equipment, prosthetics, orthotics, eye glasses, hearing aids, and walking aids are included in this classification. The qualifications and instances when this approval is appropriate are described in WAC 296-20-091 through 296-20-1103.

Bills for these miscellaneous services and appliances must be itemized per the instructions in WAC 296-20-125 to include identification of type, manufacturer, model, place of origin, place of destination, hours and mileage as applicable.

The rate of reimbursement will be the provider's usual and customary charge or the department's current established rate.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-500, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50001 Nursing services and attendant care. See WAC 296-20-091 for qualifications. Specify skill level and hours of service.

M 0855 Professional nurse services
M 0856 Nonprofessional attendant care
M 0877 Home health office call
M 0878 Home health aide care
M 0879 Visiting nurse call
M 1200 Home health-nurse visit, agency based
M 1201 Home health-physical therapy, agency based
M 1202 Home health-occupational therapy, agency based
M 1203 Home health-speech therapy, agency based
M 1204 Home health-aide visit, agency based
M 1210 Home health-nurse visit, free standing
M 1211 Home health-physical therapy, free standing
M 1212 Home health-occupational therapy, free standing
M 1213 Home health-speech therapy, free standing
M 1214 Home health-aide visit, free standing
M 3333 Visiting nurse-Physical therapy
M 4444 Visiting nurse-Occupational therapy
M 5555 Visiting nurse-Speech therapy
M 8900 Special duty nurse-RN—First shift
M 8901 Special duty nurse-RN—Second shift
M 8902 Special duty nurse-RN—Third shift
M 8903 Special duty nurse-RN—Partial shift
M 8904 Special duty nurse-LPN—First shift
M 8905 Special duty nurse-LPN—Second shift
M 8906 Special duty nurse-LPN—Third shift
M 8907 Special duty nurse-LPN—Partial shift
M 8908 Special duty nurse-RN—Holiday
M 8909 Special duty nurse-LPN—Holiday
M 8999 Unlisted nursing or attendant service.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50001, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50001, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50002 Transportation services. Specify place of departure, destination, purpose of trip and mileage as applicable.

M 0001 Base rate – Ground or air
M 0002 Ambulance – Each additional patient
M 0003 Ambulance–one–way mileage – Per mile
M 0004 Ambulance–return pickup – Same patient, same day
M 0005 Ambulance–return pickup one–way mileage – Per mile
M 0006 Ambulance–return pickup – Additional patient
M 0007 Ambulance – night call
M 0008 Ambulance – Oxygen administration
M 0009 Ambulance–waiting time – Per minute
M 0010 Bridge and ferry tolls
M 0011 Chartered air transportation
M 0012 Advanced life support – Ground or air
M 0023 Ambulance – Extra attendant
M 0024 Ambulance – Monitoring
M 0025 Cabulance – One–way mileage – Per mile
M 0026 Cabulance – Waiting time – Per minute
M 0027 Cabulance – Base rate
M 0028 Private transportation – 18¢ Per mile
M 0029 Commercial transportation
M 0030 Taxi – One–way time or mileage
M 0036 Licensed air ambulance – One–way mileage
M 0060 Ambulance – Suction catheter
M 0061 Ambulance – Oxygen mask
M 0062 Ambulance – Oxygen cannula
M 0063 Ambulance – Airway
M 0064 Ambulance – Cardboard splint
M 0065 Ambulance – Disposable cervical collar
M 0066 Ambulance – Dressing
M 0067 Ambulance – Triangular bandage
M 0068 Ambulance – Backboard, stretcher
M 0069 Ambulance – Ice packs
M 0070 Ambulance – Trauma pads
M 0071 Ambulance – Burn kit
M 0072 Ambulance – Mast trouser
M 0073 Ambulance – Heart/lung resuscitation
M 0074 Ambulance – IV administration – Per IV
M 0075 Lodging – Receipt required
M 0076 Breakfast – Receipt required $ 5.00
M 0077 Lunch – Receipt required $ 5.00
M 0078 Dinner – Receipt required $10.00
M 0079 Per diem lodging/meals $50.00
M 0080 Parking
M 0081 Interpreter
M 0099 Unlisted transportation item or service.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50002, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50002, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50003 Hearing aids and masking devices. See WAC 296-20-1101 for qualifications. Specify manufacturer and model number.

M 3500 Hearing aid
M 3505 Tinnitis masker
M 3539 Hearing aid casing
M 3559 Hearing aid earmold
M 3579 Hearing aid repairs
M 3599 Unlisted hearing device.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50003, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50003, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50004 Eyeglasses and contact lenses. See WAC 296-20-100 for qualifications.

M 3200 Eyeglass left lens
M 3201 Eyeglass right lens
M 3202 Frames – Repair
M 3203 Frames – Purchase
M 3204 Contact lens – left
M 3205 Contact lens – right
M 3206 Artificial eye, Left – optical supplier
M 3207 Artificial eye, Right – optical supplier
M 3210 Refraction
M 3299 Unlisted optical item.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50004, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50004, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50005 Orthotics and prosthetics. See WAC 296-20-1102 for qualifications. Specify type, manufacturer, and model number when applicable.

M 1000 Prosthetic – Other
M 1400 Orthotic – Other
M 1600 Orthotic – Podiatry
M 1602 Podiatry impression casting
M 6401 Prosthetic – Upper extremity
M 6402 Prosthetic – Lower extremity
M 6403 Prosthetic – Accessories/supplies
M 6407 Prosthetic repair, including labor
M 6431 Orthotic – Upper extremity
M 6432 Orthotic – Lower extremity
M 6435 Brace – Upper extremity
M 6436 Brace – Lower extremity
M 6440 Orthotic accessories/supplies
M 6442 Orthotic fitting fee
M 6444 Orthotic repair, including labor
M 6445 SACRO ease seat
M 6450 Braces to neck/spine/trunk
M 6451 Collars/casts/splints
M 6452 Brace accessories/supplies
M 6453 Brace repairs, including labor
M 6458 Pressure garments
M 6459 Support hose
M 6460 Orthopedic shoes without brace
M 6461 Orthopedic shoes with brace
M 6462 Shoe repairs
M 6463 Heel lift
M 6764 Prosthetic fitting fee
M 6799 Unlisted orthotic – Prosthetic item or service.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50005, filed 2/28/86, effective 4/1/86; 83-

24-016 (Order 83-35), § 296-23-50005, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50006 Medical supplies. Specify type, manufacturer, and model when applicable.

M 6411 Urinary collection systems supplies – Itemize
M 6466 Colostomy bags
M 6467 Colostomy accessories/supplies – Itemize
M 6769 Other small appliances/supplies – Itemize
M 6999 Unlisted equipment – Equipment repair
M 7444 Sterile distilled water
M 7447 Twill tape – Per roll
M 7448 Nonlisted disposable supplies
M 7499 Unlisted medical supplies
M 7999 Replacement of clothing/equipment damaged in injury.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50006, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50006, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50007 Pulmonary and respiratory services and supplies. Specify manufacturer and model number when applicable. See WAC 296-20-1102 for qualifications.

M 6605 Initial oxygen
M 6606 Oxygen
M 6608 Oxygen transportation/delivery
M 6609 Oxygen regulator – Purchase
M 6611 Oxygen concentrator – Rental
M 6613 Oxygen concentrator – Purchase
M 6617 Unlisted oxygen related equipment – Rental
M 6618 Unlisted oxygen related equipment – Purchase
M 6695 Repairs – Oxygen related
M 6696 Oxygen tank rental
M 6690 Portable liquid oxygen system
M 7117 Emergency delivery – Oxygen
M 7118 Oxygen mileage
M 7119 Oxygen regulator – Rental
M 7126 Aerosol tee adaptor
M 7128 Aerosol mask – Without tubing
M 7129 Multi-vent mask
M 7134 Nebulizer – Specify model
M 7135 Aerosol effusion bag
M 7136 Disposable humidifier
M 7142 Bi-flow nasal mask
M 7166 Aspirator
M 7167 Pressure pump
M 7168 Compressor
M 7169 Pulmo-aid
M 7170 VACU-aid
M 7174 Home patient kit
M 7208 IPPB equipment
M 7209 IPPB equipment respiratory only
M 7210 Portable nebulizer equipment
M 7216 Portable aspirator equipment
M 7218 Stationary respirator equipment
M 7251 Miscellaneous unlisted items/services.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50007, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50008 Hospital beds and accessories. See WAC 296-20-1102 for qualifications. Specify type, manufacturer and model when applicable.

M 6408 Hospital bed – Rental
M 6430 Trapeze bars – Rental
M 6439 Commode chair – Rental
M 6503 Hospital bed – Purchase
M 6510 Hospital bed accessories
M 6539 Commode chair – Purchase
M 6540 Commode chair accessories
M 6541 Bed pans/urinals
M 6630 Trapeze bars – Purchase
M 6631 Trapeze bars accessories
M 6699 Unlisted hospital bed or accessories.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50008, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50008, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50009 Traction equipment. See WAC 296-20-1102 for qualifications. Specify type, manufacturer and model when applicable.

M 6427 Traction equipment – Rental
M 6626 Traction equipment – Accessories
M 6627 Traction equipment – Purchase
M 6628 Unlisted traction equipment or service.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50009, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50009, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50010 Canes.

M 6434 Canes – Rental
M 6534 Canes – Purchase
M 6535 Cane accessories.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50010, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50011 Crutches.

M 6454 Crutches-metal – Rental
M 6455 Crutches-wooden – Rental
M 6553 Crutch – Accessories
M 6554 Crutches-metal – Purchase
M 6555 Crutches-wooden – Purchase.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50011, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50012 Walkers. See WAC 296-20-1102 For qualifications. Specify type, manufacturer and model when applicable.

M 6475 Walk-aid/walker – Rental
M 6655 Walk-aid/walker – Purchase
M 6656 Walk-aid/walker – Accessories
M 6657 Unlisted walker or walker accessory.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50012, filed 2/28/86, effective 4/1/86; 83-

24-016 (Order 83-35), § 296-23-50012, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50013 Wheelchairs. See WAC 296-20-1102 for qualifications. Specify type, manufacturer, and model when applicable.

M 6465 Wheelchair – Rental
M 6558 Wheelchair – Purchase
M 6666 Wheelchair accessories
M 6667 Wheelchair repair
M 6668 Powered mobility unit
M 7428 12V GELI cell battery
M 7429 12V Deep cycle battery
M 7430 Battery charger.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50013, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50013, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50014 Stimulators. See WAC 296-20-1102 for qualifications. One-month trial rental is usually required to purchase stimulators. Specify type, manufacturer, and model when applicable.

M 6418 Electromagnetic field bone stimulator for fractures and fusions – Rental
M 6419 Pulsed galvanic muscle stimulator – Rental
M 6420 Transcutaneous nerve stimulator – Rental
M 6421 Transcutaneous nerve stimulator – Purchase
M 6422 Transcutaneous nerve stimulator – Supplies
M 7175 Permanent electrodes for TNS unit
M 7176 24-Inch lead wires for TNS unit
M 7179 Power pack with batteries for TNS unit
M 7199 Unlisted stimulator service or accessory.
TAX 00

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50014, filed 2/28/86, effective 4/1/86; 83-24-016 (Order 83-35), § 296-23-50014, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50015 Vehicle and home modification. Require prior approval from the assistant director for industrial insurance.

M 8000 Home modification
M 8500 Vehicle modification.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-24-016 (Order 83-35), § 296-23-50015, filed 11/30/83, effective 1/1/84.]

WAC 296-23-50016 Drug and alcohol rehabilitation services. Authorization requirements for these services may be found in WAC 296-20-03001 and 296-20-055.

M 9100 Intake evaluation
M 9101 Physical examination
M 9102 Individual therapy, routine visit
M 9103 Individual therapy, brief visit
M 9108 Group therapy
M 9113 Chemotherapy
M 9115 Medication adjustment
M 9126 Detoxification facility (room & board).

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-50016, filed 2/28/86, effective 4/1/86.]

CHIROPRACTIC

WAC 296-23-610 General instructions. (1) Please refer to WAC 296-20-010 through WAC 296-20-125 for general information and rules pertaining to treatment of injured workers.

(2) The maximum fee is determined by multiplying the unit value of a procedure by a conversion factor. The appropriate conversion factor table for chiropractic services is the medicine tables. For x-ray services – use radiology conversion tables and procedure numbers.

(3) In addition to the rules found in WAC 296-20-010 to 296-20-125, the following rules apply when chiropractic treatment is being rendered:

(a) No more than one chiropractic adjustment per day will be authorized or paid, *except* on the initial and next two subsequent visits. The attending doctor must submit a detailed report regarding the need for the additional treatment.

(b) Treatment beyond the first 20 treatments or 60 days, whichever comes first, will not be authorized without submission of a consultation report or a comprehensive comparative exam report regarding need for further care. (See WAC 296-20-051 re: Consultation.)

(c) If needed, x-rays immediately prior to and immediately following the initial chiropractic treatment may be allowed without prior authorization.

(d) X-rays before and after subsequent chiropractic treatment will not be paid unless previously authorized. Prior authorization must be obtained for x-rays subsequent to the initial treatment.

(e) No payment will be made for excessive or unnecessary x-rays taken on initial or subsequent visits.

(f) No services or x-rays will be paid on rejected or closed claims except those rendered in conjunction with a reopening application.

(g) See WAC 296-23-01002 for custody requirements for x-rays.

(h) Treatment as a maintenance or supportive measure will not be authorized nor paid.

(4) Billing procedures itemized in WAC 296-20-125 must be followed.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-610, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-610, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-610, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-610, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-610, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-610, filed 1/30/74; Order 71-6, § 296-23-610, filed 6/1/71; Order 70-12, § 296-23-610, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-610, filed 11/27/68, effective 1/1/69.]

WAC 296-23-615 Office visits and special services.

DEFINITIONS:

Routine office visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam, i.e.:

(1) Palpation, exam and adjustment of one or more areas.

(2) Brief exam and no adjustment.

Extended office visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive office visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete re-evaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

REPORTING:

Reporting requirements are outlined in WAC 296-20-06101. The department or self-insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow-up office notes.

CHIROPRACTIC MODIFIERS:

-22 Unusual services: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report is required; the modifier -22 should be added to the procedure number.

-52 Reduced services: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced and modifier -52 should be added to the procedure number.

MATERIAL SUPPLIED BY DOCTOR:

Department or self-insurer will reimburse the doctor for materials supplied, i.e. cervical collars, heel lifts, etc., at cost only. In addition, a handling fee, not to exceed five percent of the wholesale cost of the item, will be paid. See RCW 19.68.010, professional license statutes. Use procedure number C99070.

SPECIAL SERVICES:

The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the chiropractor for materials, for his time or that of his employees. These services are generally provided as an adjunct to common chiropractic services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
C90001	Completion of report of accident ...	12.0
C90097	Completion of reopening application	12.0
C99032	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
C99040	Completion of disability card	2.0
C99052	Services requested between 10:00 p.m. and 8:00 a.m. in addition to basic services, provided the office is closed during this period of time ...	12.0
C99054	Services requested on Sundays and holidays in addition to basic services provided office is closed	12.0
C99070	Supplies, materials provided by doctor. Bill at cost	BR
C99080	Special report requested by the agency or 60-day report (see WAC 296-20-06101)	BR

INITIAL VISIT

C90000	Routine examination, history, chiropractic adjustment and submission of a report	20.0
C90017	Extended office visit including treatment - report required	30.0
C90020	Comprehensive office visit including treatment - report required in addition to the report of accident	40.0

FOLLOW-UP VISITS

C90050	Office visit including chiropractic adjustment	16.0
C90070	Extended office visit including treatment - report required	30.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-615, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-615, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-615, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-615, filed 11/24/76, effective 1/1/77; Order 75-39, § 296-23-615, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-615, filed 11/22/74, effective 4/1/75; Order 74-7, § 296-23-615, filed 1/30/74; Order 68-7, § 296-23-615, filed 11/27/68, effective 1/1/69.]

WAC 296-23-620 Chiropractic consultations. See WAC 296-20-035, 296-20-045, and 296-20-051 for rules pertaining to consultation.

Chiropractic consultation requires prior notification to the department or self-insurer. Consultants must be from an approved list of Chiropractic Consultants.

		Unit Value
C90600	Limited consultation involving one prime accepted area of injury or brief evaluation - report required..	30.0
C90605	Intermediate consultation involving two prime accepted injury areas and/or more intensive exam - report required	50.0

		Unit Value
C90620	Comprehensive consultation involving entire spinal accepted injury areas and/or extensive report – may include review of prior treatment records and x-rays – report required.	70.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-620, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-620, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-620, filed 1/30/74; Order 68-7, § 296-23-620, filed 11/27/68, effective 1/1/69.]

PHYSICAL THERAPY

WAC 296-23-710 Physical therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of injured workers. See WAC 296-20-125 for billing instructions.

Physical therapy treatment will be permitted only when given by a licensed registered physical therapist or a physical therapist assistant serving under the direction of a licensed registered physical therapist upon the basis of test findings after consultation with and periodic review by an authorized health care practitioner. Doctor's rendering physical therapy should refer to WAC 296-21-095.

Use of diapulse or similar machine on injured workers is not authorized. See WAC 296-20-03002 for further information.

A physical therapy progress report must be submitted to the attending doctor and the department or the self-insurer following 12 treatment visits or one month, whichever occurs first. Such report must be attached to the billing for services. Physical therapy treatment beyond initial 12 treatments will be authorized only upon substantiation of improvement in the worker's condition in terms of functional modalities, i.e.: Range of motion; sitting and standing tolerance; reduction in medication; etc. In addition, an outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Upon justification and subsequent authorization by the department, or self-insurer, physical therapy treatment to separate noncontiguous areas (i.e., low back, knee) requiring individual treatment or special procedures will be allowed at full rate for each area with a maximum of two areas allowed.

Physical therapy in the home and/or places other than the practitioners usual and customary business facilities will be allowed only upon prior justification and authorization by the department or self-insurer.

No inpatient physical therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

Physical therapy treatments exceeding once per day must be justified by attending doctor.

Biofeedback treatment may be rendered on doctor's orders only, by those R.P.T.'s and L.P.T.'s working under the supervision of a R.P.T. The extent of biofeedback treatment is limited to those procedures allowed within the scope of practice of the R.P.T. or L.P.T. See WAC 296-21-0501 for rules pertaining to conditions authorized and report requirements.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-710, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-24-041 (Order 81-28), § 296-23-710, filed 11/30/81, effective 1/1/82; 81-01-100 (Order 80-29), § 296-23-710, filed 12/23/80, effective 3/1/81; Order 75-39, § 296-23-710, filed 11/28/75, effective 1/1/76; Order 74-39, § 296-23-710, filed 11/22/74, effective 1/1/75; Order 74-7, § 296-23-710, filed 1/30/74; Order 71-6, § 296-23-710, filed 6/1/71; Order 70-12, § 296-23-710, filed 12/1/70, effective 1/1/71; Order 68-7, § 296-23-710, filed 11/27/68, effective 1/1/69.]

WAC 296-23-715 Modalities.

		Unit Value
	Physician or therapist is required to be in constant attendance.	
	(97000 has been deleted. To report, use 97010-97039)	
P97010	Physical medicine treatment to one area; hot or cold packs	12.0
P97012	traction, mechanical	12.0
P97014	electrical stimulation (unattended)	12.0
P97016	vasopneumatic devices	12.0
P97018	paraffin bath	12.0
P97020	microwave	12.0
P97022	whirlpool	12.0
P97024	diathermy	12.0
P97026	infrared	12.0
P97028	ultraviolet	12.0
P97039	unlisted modality (specify)	12.0
P97050	Two or more modalities to the same area	13.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 83-16-066 (Order 83-23), § 296-23-715, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-715, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-715, filed 1/30/74; Order 68-7, § 296-23-715, filed 11/27/68, effective 1/1/69.]

WAC 296-23-720 Procedures. (Therapist is required to be in constant attendance.)

		Unit Value
	(97100 has been deleted. To report, use 97110-97139)	
	(97101 has been deleted. To report, use 97145)	
P97110	Physical medicine treatment to one area, initial 30 minutes; therapeutic exercises	16.0

		Unit Value
P97112	neuromuscular reeducation	16.0
P97114	functional activities	16.0
P97116	gait training	16.0
P97118	electrical stimulation (manual)	16.0
P97122	traction, manual	16.0
P97124	massage	16.0
P97126	contrast baths	16.0
P97128	ultrasound	16.0
P97139	unlisted procedure (specify)	16.0
P97145	Physical medicine treatment to one area, each additional 15 minutes	5.0
P97200	Combination of any modality(s) and procedure(s), initial 30 minutes	16.0
P97201	Each additional 15 minutes	5.0
P97220	Hubbard tank, initial 30 minutes	24.0
P97221	Each additional 15 minutes (maximum allowance, one hour)	5.0
P97240	Pool therapy or hubbard tank with therapeutic exercises, initial 30 minutes	30.0
P97241	Each additional 15 minutes (maximum allowance, one hour)	6.0
P97250	Sterile technique (severe burn cases and open draining areas requiring sterile bandages and dressings)	6.0
P97500	Orthotics training (dynamic bracing, splinting, etc.) upper extremities, initial 30 minutes	24.0
P97501	each additional 15 minutes	12.0
P97520	Prosthetic training, initial 30 minutes	24.0
P97521	each additional 15 minutes	12.0
P97530	Kinetic activities to increase coordination, strength and/or range of motion, one area (any two extremities or trunk); initial 30 minutes, each visit	24.0
P97531	each additional 15 minutes	12.0
P97540	Activities of daily living (ADL) and diversional activities, initial 30 minutes, each visit	24.0
P97541	each additional 15 minutes	12.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-720, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-720, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-720, filed 12/23/80, effective 3/1/81; Order 76-34, § 296-23-720, filed 11/24/76, effective 1/1/77; Order 74-7, § 296-23-720, filed 1/30/74.]

WAC 296-23-725 Tests and measurements.

		Unit Value
P97700	Office visit, including one of the following tests or measurements with report, initial 30 minutes. (a) Orthotic "check-out" (b) Prosthetic "check-out" (c) Activities of daily living "check-out" (d) Biofeedback evaluation (e) Physical capacities evaluation	24.0
P97701	Each additional 15 minutes	12.0
P97720	Extremity testing for strength, dexterity or stamina, initial 30 minutes	24.0
P97721	Each additional 15 minutes	12.0
	(P97740, P97741 have been deleted. To report, see P97530, P97531)	
P97752	Muscle testing, torque curves during isometric and isokinetic exercise (e.g., by use of Cybex machine)	24.0
P99070	Supplies and materials provided by the therapist over and above those usually included with office visit or other services rendered. List item provided. Bill at cost	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-725, filed 2/28/86, effective 4/1/86; 83-16-066 (Order 83-23), § 296-23-725, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-725, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-725, filed 1/30/74.]

DRUGLESS THERAPEUTICS

WAC 296-23-810 General instructions. (1) Refer to WAC 296-20-010 through 296-20-125 regarding general rules and billing procedures.

(2) The maximum fee is determined by multiplying the unit value of a procedure by a conversion factor. The appropriate conversion tables for drugless therapeutics services is the medicine table; for x-rays-radiology table.

(3) In addition to general rules found in WAC 296-20-010 through 296-20-125, the following rules apply to drugless therapists:

(a) If the drugless therapist is dual licensed, all treatment rendered by the practitioner must be billed as "treatment of the day." Further, the practitioner must elect and notify the department or self-insurer, which type of treatment he is providing for the injured worker, and abide by rules pertaining to area of elected treatment.

(b) Drugless therapists utilizing hydro-; mechano-; and/or electro- therapy modalities cannot bill for those services in addition to office visit services. Office visit includes treatment of the day.

(c) No more than one office visit wil be allowed per day, *except* on the initial and next two subsequent visits. The attending doctor must submit a detailed report regarding the need for the additional treatment.

(d) If necessary, x–rays may be taken immediately prior to and following the initial drugless therapeutic treatment without prior authorization.

(e) X–rays immediately prior to and following each subsequent drugless therapeutic treatment will be disallowed, unless previously authorized.

(f) Prior authorization must be obtained for x–rays subsequent to initial treatment.

(g) Payment will not be made for excessive or unnecessary x–rays. No payment will be made for x–rays taken on rejected or closed claims, except those taken in conjunction with a reopening application.

(h) See WAC 296–23–01002 for custody requirements for x–rays.

(4) Drugless therapy as a maintenance or supportive measure will not be authorized or paid.

(5) Treatment beyond the first 20 treatments or 60 days, whichever occurs first, will not be authorized without submission of a consultation report or a comprehensive comparative exam report regarding need for further care.

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–810, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–810, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–23–810, filed 11/28/75, effective 1/1/76; Order 74–39, § 296–23–810, filed 11/22/74, effective 1/1/75; Order 74–7, § 296–23–810, filed 1/30/74; Order 71–6, § 296–23–810, filed 6/1/71; Order 70–12, § 296–23–810, filed 12/1/70, effective 1/1/71; Order 68–7, § 296–23–810, filed 11/27/68, effective 1/1/69.]

WAC 296–23–811 Office visits and special services.

Definitions:

Routine office visit: A level of service pertaining to the evaluation and treatment of a condition requiring only an abbreviated history and exam.

Extended office visit: A level of service pertaining to an evaluation of patient with a new or existing problem requiring a detailed history, review of records, exam, and a formal conference with patient or family to evaluate and/or adjust therapeutic treatment management and progress.

Comprehensive office visit: A level of service pertaining to an indepth evaluation of a patient with a new or existing problem, requiring development or complete re–evaluation of treatment data; includes recording of chief complaints and present illness, family history, past treatment history, personal history, system review; and a complete exam to evaluate and determine appropriate therapeutic treatment management and progress.

Reporting:

Reporting requirements are outlined in WAC 296–20–06101. The department or self–insurer will accept a brief narrative report of treatment received and the patient's progress as supporting documentation for billings in lieu of routine follow–up office notes.

Drugless therapeutic modifiers:

–22 Unusual services: When treatment services provided are greater than that usually required for listed procedures. Use of this modifier must be based on the injured worker's need for extended or unusual care. A report may be required. The modifier –22 should be added to the procedure number.

–52 Reduced services: Under certain circumstances no treatment may be given, in these cases the procedure should be reduced by *10 units* and modifier –52 should be added to the procedure number.

Material supplied by doctor:

Department or self–insurer will reimburse the doctor for materials supplied, i.e. cervical collars, heel lifts, etc., at cost only. In addition, a handling fee not to exceed five percent of the wholesale cost of the item, will be paid. See RCW 19.68.010, Professional License Statutes. Procedure Number D99070 should be used to bill these charges.

Special services:

The following services are generally part of the basic services listed in the maximum fee schedule but do involve additional expenses to the drugless therapeutic practitioner for materials, for his time or that of his employees. These services are generally provided as an adjunct to common drugless therapeutic services and should be used only when circumstances clearly warrant an additional charge over and above the usual charges for the basic services.

		Unit Value
D90001	Completion of report of accident	12.0
D90097	Completion of reopening application	12.0
D99032	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
D99040	Completion of disability card	2.0
D99052	Services requested between 6:00 p.m. and 8:00 a.m. in addition to basic services, provided the office is closed during this period of time	12.0
D99054	Services requested on Sundays and holidays in addition to basic services provided office is closed	12.0
D99070	Supplies, materials provided by doctor – bill at cost	BR
D99080	Special report requested by the agency or 60 day report. See WAC 296–20–06101	BR

		Unit Value
INITIAL VISIT		
D90000	Routine examination, history, and/or treatment (routine procedure), and submission of a report	20.0
D90017	Extended office visit including treatment – report required	30.0
D90020	Comprehensive office visit including treatment – report required in addition to the Report of Accident	40.0
Follow–up treatment		
D90050	Routine office visit including evaluation and/or treatment	16.0
D90070	Extended office visit including treatment – report required	30.0

[Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–24–041 (Order 81–28), § 296–23–811, filed 11/30/81, effective 1/1/82; 81–01–100 (Order 80–29), § 296–23–811, filed 12/23/80, effective 3/1/81; Order 76–34, § 296–23–811, filed 11/24/76, effective 1/1/77; Order 75–39, § 296–23–811, filed 11/28/75, effective 1/1/76; Order 74–39, § 296–23–815, (codified as WAC 296–23–811), filed 11/22/74, effective 4/1/75; Order 74–7, § 296–23–811, filed 1/30/74; Order 68–7, § 296–23–811, filed 11/27/68, effective 1/1/69.]

NURSING

WAC 296–23–900 Licensed nursing rules. (1) Registered nurses and licensed practical nurses may perform private duty nursing care in industrial injury cases when the attending physician deems this care necessary. (See WAC 296–20–091 for home nursing rules.)

(2) Certified registered nurses (CRNs) and advanced registered nurse practitioners (ARNPs) may perform advanced and specialized levels of nursing care on a fee for service basis in industrial injury cases within the limitations of subsections (3) and (4) of this section.

(3) Advance approval must be obtained from the department to treat industrial injury cases. To be eligible to treat industrial injuries, the registered nurse must:

(a) Be recognized by the Washington state board of nursing as a certified registered nurse (CRN) or advanced registered nurse practitioner (ARNP).

(b) Provide the department with evidence of a reliable and rapid system of obtaining physician consultation.

(4) The scope of practice for certified registered nurses or advanced registered nurse practitioners under the industrial insurance program is limited to the following, based on CRN or ARNP speciality as approved by the state board of nursing:

(a) Preparing reports of accident and progress reports for the supervising physician's signature.

(b) Emergency treatment of serious injuries to include initial wound care, administration of medication and support of life functions.

(c) Treatment of minor injuries to include suturing of minor lacerations not involving tendons, nerves or bones.

(d) Removal of sutures.

(e) Removal of foreign bodies from eyes.

(f) Removal of slivers or foreign bodies where bones, nerves and tendons are not involved.

(g) Prescribing legend drugs when so authorized by state board of nursing.

(h) Nursing type follow–up care (i.e., dressing changes, etc.)

(i) Accompanying ambulance to the site of injury and/or to the hospital with the injured workman.

(j) Home visits to evaluate claimant's condition when attendant care is being rendered for the injured worker by persons other than the nurse practitioner, may be authorized when the request is received in advance of the visit.

(k) Administration of biofeedback as per WAC 296–21–0501.

(5) BILLING PROCEDURES

Billing procedures outlined in WAC 296–20–125 apply. Certified registered nurses and advanced nurse practitioners must obtain provider account numbers from the department.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86–20–074 (Order 86–36), § 296–23–900, filed 10/1/86, effective 11/1/86; 83–16–066 (Order 83–23), § 296–23–900, filed 8/2/83. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81–01–100 (Order 80–29), § 296–23–900, filed 12/23/80, effective 3/1/81; Order 74–39, § 296–23–900, filed 11/22/74, effective 4/1/75; Order 74–7, § 296–23–900, filed 1/30/74.]

WAC 296–23–910 Maximum values are established for services rendered. The following maximum values are established for services rendered by advanced registered nurse practitioners and certified registered nurses.

Other services rendered by advanced registered nurse practitioners may be billed using the appropriate procedure number preceded by *N*– and valued at 80% of the unit value listed. Services are limited to the scope of practice defined in WAC 296–23–900(4).

		Unit Value
Medicine procedures (see WAC 296–20–135 for Conversion Factor Table).		
N90000	Initial office visit, to include history, initiation of treatment and preparation of Report of Accident for supervising physician's signature	14.0
N90010	Initial limited visit (routine involving single region or organ system)	24.0
N90015	Initial office visit, intermediate	40.0
N90030	Follow–up office visit, minimal.....	6.4
N90040	Follow–up office visit, brief .	9.6
N90050	Follow–up limited office visit	12.8

		Unit Value
N90060	Follow–up visit, intermediate exam	16.0
N90070	Follow–up office visit, extended	24.0
N90080	Follow–up office visit, comprehensive	40.0
N90701	Immunization, active; diptheria and tetanus toxoids and pertussis vaccine (DTP)	6.4
N90702	diphtheria and tetanus toxoids (DT)	4.0
N90718	tetanus and diphtheria toxoids absorbed, for adult use (Td)	4.0
N90782	Therapeutic injection of medication (specify); subcutaneous or intramuscular	4.8
N90784	intravenous	6.4
N90788	Intramuscular injection of antibiotic (specify)	4.8
N90900	Biofeedback training by electromyogram application, including office visit (one hour)	40.0
N90901	(one–half hour)	24.0
N90902	In conduction disorder, including office visit (one hour)	40.0
N90903	(one–half hour)	24.0
N90904	Regulation of blood pressure, including office visit (one hour)	40.0
N90905	(one–half hour)	24.0
N90906	Regulation of skin temperature or peripheral blood flow, including office visit (one hour)	40.0
N90907	(one–half hour)	24.0
N90908	By electroencephalogram application, including office visit (one hour)	40.0
N90909	(one–half hour)	24.0
N90910	By electro–oculogram, including office visit (one hour)	40.0
N90911	(one–half hour)	24.0
N90912	Diagnostic evaluation, includes report (one hour)	48.0
N90913	Follow–up evaluation, includes report (one–half hour)	24.0
N97070	Physical medicine modalities and procedures by other than registered physical therapist in remote area or first six visits in advanced registered nurse practitioner clinic	4.0
N99000	Handling and/or conveyance of specimen for transfer to a laboratory	4.8
N99013	Telephone call for consultation or medical management; simple or brief, under 15 minutes	4.0
N99014	intermediate 15–30 minute	8.0
N99015	lengthy or complex	12.0
N99054	Office visit, Sunday, holidays or at night. To be paid in addition to fees listed above	7.0
N99064	Emergency care facility services: Emergency services outside regular office hours	20.0
N99065	during regular office hours	12.8
N99070	Supplies and materials provided over and above those usually included with office visit or other services rendered (list drugs, trays, supplies or materials cast room and/or casting supplies provided). Bill at cost	BR
N99082	Accompanying an ambulance to the site of the injury and/or the hospital. (Each fifteen minutes or fraction thereof)	7.0

Minor surgical procedures

(See WAC 296–22–023 for complete text and WAC 296–20–145 for Conversion Factor Table)

N10120	Incision and removal foreign body, subcutaneous tissues; simple	.32
N11040	Debridement; skin, partial thickness	BR
N12001	Simple repair wound–scalp, neck, extremities, trunk 2.5 cm	.32
N12002	2.5 cm – 7.5 cm	.48
N12004	7.5 cm – 12.5 cm	.64
N12005	12.5 cm – 20 cm	.80
N12006	20 cm – 30 cm	.96
N12007	over 30 cm	BR
N12011	Simple repair wound, face, ear, eyelids, to 2.5 cm	.48
N12013	2.5 cm – 5 cm	.64
N12014	5 cm – 7.5 cm	.80
N12015	7.5 cm – 12.5 cm	.96
N12016	12.5 cm – 20 cm	1.12
N12017	20 cm – 30 cm	1.28
N12018	30 cm	BR
N12031	Layer closure of wounds of scalp, axillae, trunk	.48

		Unit Value
N12032	2.5 cm – 7.5 cm	.64
N12034	7.5 cm – 12.5 cm	.80
N12035	12.5 cm – 20 cm	.96
N12036	20 cm – 30 cm	BR
N12037	Over 30 cm	BR
N12041	Layer, closure of wound neck, hands, feet, genital ...	.64
N12042	2.5 cm – 7.5 cm	.80
N12044	7.5 cm – 12.5 cm	.96
N12045	12.5 cm – 20 cm	1.12
N12046	20 cm – 30 cm	1.28
N12047	30 cm.....	BR
N12051	Layer closure of wounds, face, ear, eye, nose 2.5 cm ..	.80
N12052	2.5 cm – 5 cm.....	.96
N12053	5 cm – 7.5 cm.....	1.12
N12054	7.5 cm – 12.5 cm	1.28
N12055	12.5 cm – 20 cm	.44
N12056	20 cm – 30 cm	1.60
N12057	30 cm.....	BR

Burns, local treatment (see WAC 296-22-026 for complete text and WAC 296-20-145 for Conversion Factor Table)

N16000	Initial treatment first degree burns	.24
N16010	Dressings and/or debridement; initial or subsequent; under anesthesia, small.....	.64
N16020	without anesthesia	.32

Introduction or removal (see WAC 296-20-145 for Conversion Factor Table)

N20520	Removal foreign body in muscle, simple.....	.96

Casts

N29075	Application; plaster figure of eight; elbow to fingers (short arm).....	.40

Splints

N29125	Application of short arm (forearm and hand); static ..	.40

Removal ocular foreign body

N65220	Removal foreign body, external eye; corneal, without slit lamp.....	.48

Radiology
(See WAC 296-20-150 for Conversion Factor Table)

N73090	Forearm including one joint, A–P and lateral	3.8
N73130	X-ray hand complete, minimum 3 views	4.8
N73550	Femur (thigh), A–P and lateral.....	4.8

Pathology
(See WAC 296-20-155 for Conversion Factor Table)

N81000	Urinalysis, routine, complete.....	9.6
N81002	Routine, without microscopy	6.4
N87040	Culture, bacterial, definitive aerobic; blood (may include anaerobic screen)	38.4
N87045	stool	20.0
N87060	throat or nose	16.0
N87070	any other source	12.8
N87181	Sensitivity studies antibiotic, agar diffusion method, per antibiotic	32.0
N87184	disc method per plate (12 or less discs) ...	19.2

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-910, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-910, filed 2/28/86, effective 4/1/86. Statutory Authority: RCW 51.04.020(4), 51.04.030 and 51.16.120(3). 81-01-100 (Order 80-29), § 296-23-910, filed 12/23/80, effective 3/1/81; Order 74-7, § 296-23-910, filed 1/30/74.]

VOCATIONAL SERVICES

WAC 296-23-950 Massage therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of injured workers. See WAC 296-20-125 for billing instructions.

Massage therapy treatment will be permitted when given by a licensed massage practitioner only upon written orders from the worker's attending doctor.

A progress report must be submitted to the attending doctor and the department or the self-insurer following six treatment visits or one month, whichever comes first. Massage therapy treatment beyond the initial six treatments will be authorized only upon substantiation of improvement in the worker's condition in terms of functional modalities, i.e., range of motion; sitting and standing tolerance; reduction in medication; etc. In addition, an outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Massage therapy in the home and/or places other than the practitioners usual and customary business facilities will be allowed only upon prior justification and authorization by the department or self-insurer.

No inpatient massage therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

Massage therapy treatments exceeding once per day must be justified by attending doctor.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-950, filed 2/28/86, effective 4/1/86.]

WAC 296-23-960 Massage--Modalities. Therapist is required to be in constant attendance.

CODE	DESCRIPTION	RUV
9 97010	Hot and Cold Packs	12.0
9 97124	Massage, One-Half Hour	16.0
9 97125	Additional 15 Minutes	5.0
9 97200	Combination of Modalities and/or Massage, One-Half Hour	16.0
9 97201	Additional 15 Minutes	5.0

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-960, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-960, filed 2/28/86, effective 4/1/86.]

WAC 296-23-970 Occupational therapy rules. Practitioners should refer to WAC 296-20-010 through 296-20-125 for general information and rules pertaining to the care of injured workers. See WAC 296-20-125 for billing instructions.

Occupational therapy treatment will be permitted when given by a licensed occupational therapist or an occupational therapist assistant serving under the direction of a licensed occupational therapist only upon written orders of a doctor. Vocational counselors assigned to injured workers by the department or self-insurer may request occupational therapy evaluation. However, occupational therapy treatment must be ordered by a doctor.

An occupational therapy progress report must be submitted to the attending doctor and the department or self-insurer following twelve treatment visits or one month, whichever occurs first. Occupational therapy treatment beyond the initial twelve treatments will be authorized only upon substantiation of improvement in the worker's condition in terms of functional modality, i.e., range of motion; sitting and standing tolerance; reduction in medication; etc. In addition, an outline of the proposed treatment program, the expected restoration goals, and the expected length of treatment will be required.

Upon justification and subsequent authorization by the department or self-insurer, occupational therapy treatment to separate noncontiguous areas (i.e., low back, knee) requiring individual treatment or special procedures will be allowed at full rate for each area with a maximum of two areas allowed.

Occupational therapy in the injured worker's home and/or places other than the practitioner's usual and customary business facility will be allowed only upon prior justification and authorization by the department or self-insurer.

No inpatient occupational therapy treatment will be allowed when such treatment constitutes the only or major treatment received by the worker. See WAC 296-20-030 for further information.

Occupational therapy treatments exceeding once per day must be justified by the attending doctor.

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-06-032 (Order 86-19), § 296-23-970, filed 2/28/86, effective 4/1/86.]

WAC 296-23-980 Occupational therapy services.

		Unit Value
97010	Physical medicine treatment to one area, hot or cold packs	12.0
97016	vasopneumatic devices	12.0
97018	paraffin bath	12.0
97110	therapeutic exercises	16.0
97112	neuromuscular reeducation	16.0
97114	functional activities	16.0
97145	Physical medicine treatment to one area, each additional 15 minutes	5.0
97200	Combination of any modality(s) and procedure(s), initial 30 minutes	16.0
97201	Each additional 15 minutes	5.0
97500	Orthotics training (dynamic bracing, splinting, etc.) upper extremities, initial 30 minutes	24.0
97501	each additional 15 minutes	12.0
97520	Prosthetic training, initial 30 minutes	24.0
97521	each additional 15 minutes	12.0
97530	Kinetic activities to increase coordination, strength and/or range of motion, one area (any two extremities or trunk), initial 30 minutes	24.0
97531	each additional 15 minutes	12.0
97540	Activities of daily living (ADL) and diversional activities, initial 30 minutes	24.0
97541	each additional 15 minutes	12.0
97700	One of the following tests or measurements with report, initial 30 minutes (a) Orthotic "check-out" (b) Prosthetic "check-out" (c) Activities of daily living "check-out" (d) Biofeedback evaluation (e) Physical capacities evaluation	24.0
97701	each additional 15 minutes	12.0
97720	Extremity testing for strength, dexterity or stamina, initial 30 minutes	24.0
97721	each additional 15 minutes	12.0
97799	Unlisted physical medicine service or procedure	BR
99030	Mileage, one way, each mile beyond 7 mile radius of point of origin (office or home), per mile	2.0
99070	Supplies and materials provided by the therapist over and above those usually included with office visit or other services rendered. List item provided. Bill at cost.	BR

[Statutory Authority: RCW 51.04.020(4) and 51.04.030. 86-20-074 (Order 86-36), § 296-23-980, filed 10/1/86, effective 11/1/86; 86-06-032 (Order 86-19), § 296-23-980, filed 2/28/86, effective 4/1/86.]

Chapter 296-24 WAC
GENERAL SAFETY AND HEALTH STANDARDS

Reviser's note: To simplify the organization of this lengthy chapter and to assist the user in locating the desired subject matter, the agency has divided this chapter into subchapters. Only the names of such subchapters are shown in this chapter digest; for a full listing of sections within subchapters refer to the appropriate subchapter digest preceding the text of such sections.

Subchapters

Part A-1 General, educational, medical and first-aid requirements. (WAC 296-24-001 through 296-24-073)
Part A-2 Personal protective equipment. (WAC 296-24-075 through 296-24-094)
Part B-1 Sanitation, temporary labor camps and nonwater carriage disposal systems. (WAC 296-24-120 through 296-24-13013)
Part B-2 Safety color code for marking physical hazards, etc., window washing. (WAC 296-24-135 through 296-24-14519)
Part C Machinery and machine guarding. (WAC 296-24-150 through 296-24-20533)
Part D Materials handling and storage, including cranes, derricks, etc., and rigging. (WAC 296-24-215 through 296-24-29431)
Part E Hazardous materials, flammable and combustible liquids, spray finishing, dip tanks. (WAC 296-24-295 through 296-24-450)
Part F-1 Storage and handling of liquefied petroleum gases. (WAC 296-24-475 through 296-24-47517)
Part F-2 Storage and handling of anhydrous ammonia. (WAC 296-24-510 through 296-24-51099)
Part G Means of egress, fire protection and fire suppression equipment. (WAC 296-24-550 through 296-24-63599)
Part H-1 Hand and portable powered tools and other hand-held equipment. (WAC 296-24-650 through 296-24-67005)
Part H-2 Safe practices of abrasive blasting operations, ventilation. (WAC 296-24-675 through 296-24-67701)
Part I Welding, cutting and brazing. (WAC 296-24-680 through 296-24-722)
Part J-1 Working surfaces, guarding floors and wall openings, ladders, scaffolds. (WAC 296-24-735 through 296-24-85505)
Part J-2 Powered platforms, etc. (WAC 296-24-870 through 296-24-90009)
Part K Compressed gas and compressed gas equipment. (WAC 296-24-920 through 296-24-94003)
Part L Electrical. (WAC 296-24-950 through 296-24-960)

Part A-1
GENERAL, EDUCATIONAL, MEDICAL AND FIRST-AID REQUIREMENTS

WAC

296-24-001 Foreword.
296-24-003 Subsections, subdivisions, items, subitems, and segments.
296-24-005 Purpose and scope.
296-24-006 Equipment approval by nonstate agency or organization.
296-24-007 Incorporation of standards of national organization.
296-24-008 Incorporation of standards of federal agency.
296-24-010 Variance and procedure.
296-24-012 Definitions applicable to all sections of this chapter.
296-24-015 Education and first-aid standards.
296-24-020 Management's responsibility.
296-24-025 Employee's responsibility.
296-24-040 Accident prevention programs.
296-24-045 Safety and health committee plan.
296-24-055 Safety bulletin board.
296-24-060 First-aid training and certification.
296-24-065 First-aid kit.
296-24-067 First-aid station.
296-24-070 First-aid room.
296-24-073 Safe place standards.

WAC 296-24-001 Foreword. This chapter has been compiled with the purpose of consolidating all safety rules of general application into one chapter of the Washington Administrative Code, by the promulgation of the rules contained herein. It is also the intent that the safety rules of the Washington state department of labor and industries, will be at least as effective as those adopted by the U.S. Department of Labor and administered by the Occupational Safety and Health Administration as published in the Code of Federal Regulations. The division of safety is incorporating many of the existing safety rules of general application and adding new rules under this chapter.

[Order 73-5, § 296-24-001, filed 5/9/73 and Order 73-4, § 296-24-001, filed 5/7/73.]

WAC 296-24-003 Subsections, subdivisions, items, subitems, and segments. (1) That portion of section numeration appearing after the chapter designation appears in either a three digit or a five digit format (e.g. 296-24-330 and 296-24-33002). The final two digits of the section number are implied decimal extensions of the first three digits and represent a further division of the three digit enumeration.

(2) Sections of this chapter may be divided into subsections (1), (2), (3), etc., which may in turn be divided into subdivisions (a), (b), (c), etc., which may be further divided into items (i), (ii), (iii), etc., which may be further divided into subitems (A), (B), (C), etc., which may be further divided into segments (aa), (bb), (cc), etc., all according to the following hierarchy, e.g.

Sections	296-24-330 and 296-24-33002
Subsections	(1) (2)
Subdivisions	(a) (b)
Items	(i) (ii)
Subitems	(A) (B)
Segments	(aa) (bb)

[Order 76-6, § 296-24-003, filed 3/1/76; Order 73-5, § 296-24-003, filed 5/9/73 and Order 73-4, § 296-24-003, filed 5/7/73.]

WAC 296-24-005 Purpose and scope. The rules included in this chapter apply throughout the state of Washington, to any and all work places under the jurisdiction of the department of labor and industries. These rules are minimum safety requirements with which all industries must comply. Special industry rules which will complement or augment rules contained in this chapter,

appear as vertical standards in other chapters of Title 296 WAC. By adherence to such rules industrial accidents may be eliminated or minimized.

[Order 73-5, § 296-24-005, filed 5/9/73 and Order 73-4, § 296-24-005, filed 5/7/73.]

WAC 296-24-006 Equipment approval by nonstate agency or organization. Whenever a provision of this chapter states that only that equipment or those processes approved by an agency or organization other than the department of labor and industries, such as the Underwriters Laboratories or the Bureau of Mines, shall be utilized, that provision shall be construed to mean that approval of such equipment or process by the designated agency or group shall be prima facie evidence of compliance with the provision of this chapter.

[Order 73-5, § 296-24-006, filed 5/9/73 and Order 73-4, § 296-24-006, filed 5/7/73.]

WAC 296-24-007 Incorporation of standards of national organization. Whenever a provision of this chapter incorporates by reference a national code or portion thereof which has been adopted by and is currently administered by another state agency, compliance with those provisions adopted and administered by such other state agency, if from a more recent edition of such national code, will be deemed to be prima facie evidence of compliance with the provisions of this chapter.

[Order 73-5, § 296-24-007, filed 5/9/73 and Order 73-4, § 296-24-007, filed 5/7/73.]

WAC 296-24-008 Incorporation of standards of federal agency. (1) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations (CFR) or any other regulations adopted by an agency of the federal government, that provision of this chapter shall be construed to mean that compliance with such regulations shall be prima facie evidence of compliance with the provisions of this chapter.

(2) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations, the provisions so incorporated shall be those in effect on the date of effectiveness of this chapter, unless the content of the incorporating section specifies otherwise.

[Order 73-5, § 296-24-008, filed 5/9/73 and Order 73-4, § 296-24-008, filed 5/7/73.]

WAC 296-24-010 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the director of the department of labor and industries or his authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the department of labor and industries and upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the director of the department of labor and industries at Olympia, Washington, or his duly authorized representative, the supervisor of safety, division of industrial safety and health, department of labor and industries, Olympia, Washington. Variance application forms may be obtained from the department upon request.

[Order 74-27, § 296-24-010, filed 5/7/74; Order 73-5, § 296-24-010, filed 5/9/73 and Order 73-4, § 296-24-010, filed 5/7/73.]

WAC 296-24-012 Definitions applicable to all sections of this chapter.

NOTE: Meaning of words. Unless the context indicates otherwise, words used in this chapter shall have the meaning given in this section.

(1) "Approved" means approved by the director of the department of labor and industries or his authorized representative: *Provided, however,* That should a provision of this chapter state that approval by an agency or organization other than the department of labor and industries is required, such as Underwriters' Laboratories or the Bureau of Mines, the provisions of WAC 296-24-006 shall apply.

(2) "Authorized person" means a person approved or assigned by the employer to perform a specific type of duty or duties or to be at a specific location or locations at the job site.

(3) "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective action to eliminate them.

(4) "Department" means the department of labor and industries.

(5) "Director" means the director of the department of labor and industries, or his designated representative.

(6) "Employer" means any person, firm, corporation, partnership, business trust, legal representative, or other business entity which engages in any business, industry, profession, or activity in this state and employs one or more employees or who contracts with one or more persons, the essence of which is the personal labor of such person or persons and includes the state, counties, cities, and all municipal corporations, public corporations, political subdivisions of the state, and charitable organizations: *Provided,* That any person, partnership, or business entity not having employees, and who is covered by the industrial insurance act shall be considered both an employer and an employee.

(7) "Hazard" means that condition, potential or inherent, which can cause injury, death, or occupational disease.

(8) "Qualified" means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience,

has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project.

(9) "Safety factor" means the ratio of the ultimate breaking strength of a member or piece of material or equipment to the actual working stress or safe load when in use.

(10) "Safety and health standard" means a standard which requires the adoption or use of one or more practices, means, methods, operations, or processes reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

(11) "Shall" means mandatory.

(12) "Should" means recommended.

(13) "Standard safeguard" means a device designed and constructed with the object of removing the hazard of accident incidental to the machine, appliance, tool, building, or equipment to which it is attached.

Standard safeguards shall be constructed of either metal or wood or other suitable material or a combination of these. The final determination of the sufficiency of any safeguard rests with the director of the department of labor and industries through the division of safety.

(14) "Suitable" means that which fits, or has the qualities or qualifications to meet a given purpose, occasion, condition, function, or circumstance.

(15) "Working day" means a calendar day, except Saturdays, Sundays, and legal holidays as set forth in RCW 1.16.050, as now or hereafter amended, and for the purposes of the computation of time within which an act is to be done under the provisions of this chapter, shall be computed by excluding the first working day and including the last working day.

(16) "Workmen," "personnel," "man," "person," employee," and other terms of like meaning, unless the context of the provision containing such term indicates otherwise, mean an employee of an employer who is employed in the business of his employer whether by way of manual labor or otherwise and every person in this state who is engaged in the employment of or who is working under an independent contract the essence of which is his personal labor for an employer whether by manual labor or otherwise.

(17) "Work place" means any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control, and includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended.

(18) Abbreviations used in this chapter:

(a) "ANSI" means American National Standards Institute.

(b) "API" means American Petroleum Institute.

(c) "ASA" means American Standards Association.

(d) "ASAE" means American Society of Agricultural Engineers.

(e) "ASHRE" means American Society of Heating and Refrigeration Engineers.

(f) "ASME" means American Society for Mechanical Engineers.

(g) "ASTM" means American Society for Testing and Materials.

(h) "AWS" means American Welding Society.

(i) "BTU" means British thermal unit.

(j) "BTUH" means British thermal unit per hour.

(k) "CFM" means cubic feet per minute.

(l) "CFR" means Code of Federal Register.

(m) "CGA" means Compressed Gas Association.

(n) "CIE" means Commission Internationale de l' Eclairage.

(o) "DOT" means department of transportation.

(p) "FRP" means fiberglass reinforced plastic.

(q) "GPM" means gallons per minute.

(r) "ICC" means Interstate Commerce Commission.

(s) "ID" means inside diameter.

(t) "LPG" means liquefied petroleum gas.

(u) "MCA" means Manufacturing Chemist Association.

(v) "NBFU" means National Board of Fire Underwriters.

(w) "NEMA" means National Electrical Manufacturing Association.

(x) "NFPA" means National Fire Protection Association.

(y) "NTP" means normal temperature and pressure.

(z) "OD" means outside diameter.

(aa) "PSI" means pounds per square inch.

(bb) "PSIA" means pounds per square inch atmospheric.

(cc) "PSIG" means pounds per square inch gauge.

(dd) "RMA" means Rubber Manufacturers Association.

(ee) "SAE" means Society of Automotive Engineers.

(ff) "TFI" means The Fertilizer Institute.

(gg) "TSC" means Trailer Standard Code.

(hh) "UL" means Underwriters' Laboratories, Inc.

(ii) "USASI" means United States of America Standards Institute.

(jj) "USC" means United States Code.

(kk) "USCG" means United States Coast Guard.

(ll) "WAC" means Washington Administrative Code.

(mm) "WISHA" means Washington Industrial Safety and Health Act of 1973.

[Order 73-5, § 296-24-012, filed 5/9/73 and Order 73-4, § 296-24-012, filed 5/7/73.]

WAC 296-24-015 Education and first-aid standards. It shall be the duty of every employer to comply with such standards and systems of education for safety as shall be, from time to time, prescribed for such employer by the director of labor and industries through the division of safety or by statute. (Chapter 49.17 RCW.)

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-015, filed 11/13/80; Order 73-5, § 296-24-015, filed 5/9/73 and Order 73-4, § 296-24-015, filed 5/7/73.]

WAC 296-24-020 Management's responsibility. (1) It shall be the responsibility of management to establish and supervise:

(a) A safe and healthful working environment.

(b) An accident prevention program as required by these standards.

(c) Training programs to improve the skill and competency of all employees in the field of occupational safety and health. Such training shall include the on-the-job instructions on the safe use of powered materials handling equipment, machine tool operations, use of toxic materials and operation of utility systems prior to assignments to jobs involving such exposures.

(2) After the emergency actions following accidents that cause serious injuries that have immediate symptoms, a preliminary investigation of the cause of the accident shall be conducted. The investigation shall be conducted by a person designated by the employer, the immediate supervisor of the injured employee, witnesses, employee representative if available and any other person with the special expertise required to evaluate the facts relating to the cause of the accident. The findings of the investigation shall be documented by the employer for reference at any following formal investigation.

(3) Reporting of fatality or multiple hospitalization accidents.

(a) Within 24 hours after the occurrence of an employment accident which results in an immediate or probable fatality(s) or which results in [the] hospitalization of two or more employees, the employer of any employee so injured or killed shall report the accident [either orally or in writing] to the nearest office of the department. The reporting may be by telephone or telegraph. The reporting shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries. The director may require such additional reports, in writing or otherwise, as he deems necessary, concerning the accident.

(b) Equipment involved in an accident resulting in an immediate or probable fatality, shall not be moved, until a representative of the division of industrial safety and health investigates the accident and releases such equipment, except where removal is essential to prevent further accident. Where necessary to remove the victim, such equipment may be moved only to the extent of making possible such removal.

(c) Upon arrival of division of industrial safety and health investigator, employer shall assign to assist the investigator, the immediate supervisor and all employees who were witnesses to the accident, or whoever the investigator deems necessary to complete his investigation.

(4) A system for maintaining records of occupational injuries and illnesses as prescribed by chapter 296-27 WAC.

Note: Recordable cases include:

1. Every occupational death.
2. Every industrial illness.
3. Every occupational injury that involves one of the following:
   a. Unconsciousness.
   b. Inability to perform all phases of regular job.
   c. Inability to work full time on regular job.
   d. Temporary assignment to another job.
   e. Medical treatment beyond first-aid.

All employers with eleven or more employees shall record occupational injury and illness information on forms OSHA 101 – Supplementary Record Occupational Injuries and Illnesses and OSHA 200 – Log and Summary. Forms other than OSHA 101 may be substituted for the Supplementary Record of Occupational Injuries and Illnesses if they contain the same items.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42.30 and 43.22 RCW. 78-12-017 (Order 78-22), § 296-24-020, filed 11/13/78; Order 74-27, § 296-24-020, filed 5/7/74; Order 73-5, § 296-24-020, filed 5/9/73 and Order 73-4, § 296-24-020, filed 5/7/73.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-24-025 Employee's responsibility. (1) Employees shall coordinate and cooperate with all other employees in an attempt to eliminate accidents.

(2) Employees shall study and observe all safe practices governing their work.

(3) Employees should offer safety suggestions, wherein such suggestions may contribute to a safer work environment.

(4) Employees shall apply the principles of accident prevention in their daily work and shall use proper safety devices and protective equipment as required by their employment or employer.

(5) Employees shall properly care for all personal protective equipment.

(6) Employees shall make a prompt report to their immediate supervisor, of each industrial injury or occupational illness, regardless of the degree of severity.

(7) Employees shall not wear torn or loose clothing while working around machinery.

[Order 74-27, § 296-24-025, filed 5/7/74; Order 73-5, § 296-24-025, filed 5/9/73 and Order 73-4, § 296-24-025, filed 5/7/73.]

WAC 296-24-040 Accident prevention programs. Each employer shall develop a formal accident-prevention program, tailored to the needs of the particular plant or operation and to the type of hazards involved. The division may be contacted for assistance in developing appropriate programs.

(1) The following are the minimal program elements for all employers:

(a) A safety orientation program describing the employer's safety program and including:

(i) How and when to report injuries, including instruction as to the location of first-aid facilities.

(ii) How to report unsafe conditions and practices.

(iii) The use and care of required personal protective equipment.

(iv) The proper actions to take in event of emergencies including the routes of exiting from areas during emergencies.

(v) Identification of the hazardous gases, chemicals or materials involved along with the instructions on the safe use and emergency action following accidental exposure.

(vi) A description of the employer's total safety program.

(vii) An on–the–job review of the practices necessary to perform the initial job assignments in a safe manner.

(b) A designated safety and health committee consisting of management and employee representatives with the employee representatives being elected or appointed by fellow employees.

(2) Each accident–prevention program shall be outlined in written format.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240 and chapters 42.30 and 43.22 RCW. 78–12–017 (Order 78–22), § 296–24–040, filed 11/13/78; Order 74–27, § 296–24–040, filed 5/7/74; Order 73–5, § 296–24–040, filed 5/9/73 and Order 73–4, § 296–24–040, filed 5/7/73.]

WAC 296–24–045 Safety and health committee plan. (1) All employers of eleven or more employees, shall have a designated safety committee composed of employer–selected and employee–elected members.

(a) The terms of employee–elected members shall be a maximum of one year. Should a vacancy occur on the committee, a new member shall be elected prior to the next scheduled meeting.

(b) The number of employer–selected members shall not exceed the number of employee–elected members.

(2) The safety committee shall have an elected chairperson.

(3) The safety committee shall be responsible for determining the frequency of committee meetings.

Note: If the committee vote on the frequency of safety meetings is stalemated, the division's regional safety educational representative shall be consulted for recommendations.

(a) The committee shall be responsible for determining the date, hour and location of the meeting.

(b) The length of each meeting shall not exceed one hour except by majority vote of the committee.

(4) Minutes of each committee meeting shall be prepared and filed for a period of at least one year and shall be made available for review by noncompliance personnel, of the division of industrial safety and health.

(5) Safety and health committee meetings shall address the following:

(a) A review of the safety and health inspection reports to assist in correction of identified unsafe conditions or practices.

(b) An evaluation of the accident investigations conducted since the last meeting to determine if the cause of the unsafe acts or unsafe condition involved was properly identified and corrected.

(c) An evaluation of the accident and illness prevention program with a discussion of recommendations for improvement where indicated.

(d) The attendance shall be documented.

(e) The subject(s) discussed shall be documented.

(6) All employers of ten or less employees and employers of eleven or more employees where the employees are segregated on different shifts or in widely dispersed locations in crews of ten or less employees, may elect to have foreman–crew meetings in lieu of a safety and health committee plan provided:

(a) Foreman–crew safety meetings shall be held at least once a month, or if conditions require, weekly or biweekly meetings shall be held to discuss safety problems as they arise.

(b) All items under subsection (5) of this section, shall be complied with.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80–17–014 (Order 80–20), § 296–24–045, filed 11/13/80; 78–12–017 (Order 78–22), § 296–24–045, filed 11/13/78.]

WAC 296–24–055 Safety bulletin board. There shall be installed and maintained in every fixed establishment employing eight or more persons, a safety bulletin board sufficient in size to display and post safety bulletins, newsletters, posters, accident statistics and other safety educational material. It is recommended that safety bulletin boards be painted green and white.

[Order 73–5, § 296–24–055, filed 5/9/73 and Order 73–4, § 296–24–055, filed 5/7/73.]

WAC 296–24–060 First–aid training and certification. The purpose of this section is to assure that all employees of this state can be afforded quick and effective first–aid attention in the event that an injury occurs on the job. The means of achieving this purpose is to assure the presence of personnel trained in first–aid procedures at or near those places where employees are working. Compliance with the provisions of this section may require the presence of more than one first–aid trained person.

(1) In addition to RCW 51.36.030, every employer shall comply with the department's requirements for first–aid training and certification.

(2) There shall be present or available at all times, a person or persons holding a valid certificate of first–aid training. (A valid first–aid certificate is one which is less than three years old.)

(3) Compliance with the requirements of subsection (2) of this section may be achieved as follows:

(a) All foremen, supervisors, or persons in direct charge of crews working in physically dispersed operations, shall have a valid first–aid certificate: *Provided*, That if the duties or work of the foreman, supervisor or person in direct charge of the crew requires an absence from the crew, another person holding a valid first–aid certificate shall be present. For the purposes of this section, a crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed work place such as occurs in construction, logging, etc. If there is no foreman, supervisor or person in direct charge assigned to the crew, at least one employee shall have a valid first–aid certificate. In emergencies, foremen, supervisors and persons in direct charge of a crew will be permitted to work up to 30 days

without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(b) In fixed establishments, all foremen, supervisors, or persons in direct charge of a group or groups of employees shall have a valid first-aid certificate: *Provided*, That in fixed establishments where the foreman, supervisor, or person in charge has duties which require his absence from the work site of the group, another person holding a valid first-aid certificate shall be present or available to the group.

Note: Foremen, supervisors or persons in direct charge of a group or groups of employees will be permitted to work up to 30 days without having the required certificate, providing an employee in the crew or another foreman in the immediate work area has the necessary certificate.

(c) In fixed establishments organized into distinct departments or equivalent organizational units such as department stores, large company offices, etc., a person or persons holding a valid first-aid certificate shall be present or available at all times employees are working within that department or organizational unit.

(d) In small businesses, offices or similar types of fixed workplaces, compliance may be achieved by having a number of such small businesses, offices, etc., combined into a single unit for the purpose of assuring the continued presence or availability of a person or persons holding a valid first-aid training certificate.

A plan for combining a number of small businesses etc., into such a group shall be submitted to the division of industrial safety and health, safety education section, for approval. That section is also available to assist employers who wish to develop such a plan. Criteria for approval by the division shall include:

(i) The businesses within the group must not be widely dispersed;

(ii) The name(s) of the person or persons holding the first-aid certificates, their usual places of work, their phone numbers, and other appropriate information shall be posted in each establishment which is a member of the group, in a place which can reasonably be expected to give notice to employees of that establishment;

(iii) First-aid kits must be available as required by WAC 296-24-065.

(e) Valid certification shall be achieved by passing a course of first-aid instruction and participation in practical application of the following subject matter.

Bleeding control and bandaging.
Practical methods of artificial respiration, including mouth to mouth and mouth to nose resuscitation.
Closed chest heart massage.
Poisons.
Shock, unconsciousness, stroke.
Burns, scalds.
Sunstroke, heat exhaustion.
Frostbite, freezing, hypothermia.
Strains, sprains, hernias.
Fractures, dislocations.
Proper transportation of the injured.
Bites, stings.
Subjects covering specific health hazards likely to be encountered by co-workers of first-aid students enrolled in the course.

(4) In physically dispersed operations, at least one member of each crew shall have a valid first-aid certificate. A crew shall mean a group of two or more employees working at a work site separate and remote from the main office or fixed workplace such as occurs in construction, logging, etc.

(5) Industrial first-aid course instructors will, upon request, be furnished by the division of industrial safety and health, department of labor and industries, either directly or through a program with the community colleges or vocational education.

(6) Employers of employees working in fixed establishments, meeting the following criteria, are exempt from the requirements of this section: *Provided*

(a) They can submit written evidence to the department, upon request, that the worksite of their employees is within a two-minute time frame of response by an aid car, medic unit or established ambulance service with first-aid trained attendants.

(b) There is a back-up aid car, medic unit or established ambulance service within the two-minute response time; or that a first-aid trained person with readily available transportation is on the site of the posted emergency phone number for immediate dispatch in the event the primary unit is not available.

(c) There are no traffic impediments, such as draw bridges, railroad track; etc., along the normal route of travel of the aid car, medic unit or established ambulance service that would delay arrival beyond the required two minute time frame.

(d) Emergency telephone numbers are posted on all first-aid kits and at all telephones on the worksite.

(e) The above services are available or exist at all times when more than one employee is on the worksite.

Note: A construction site that will be of more than six months duration, such as a large building, shall be considered a fixed establishment for the purposes of this section. Doctor's offices and clinics are not to be considered as alternates due to the fact that very often doctor's schedules require them to be away from their offices.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-060, filed 6/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43-.22 RCW. 80-17-014 (Order 80-20), § 296-24-060, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-060, filed 11/13/78; Order 74-27, § 296-24-060, filed 5/7/74; Order 73-5, § 296-24-060, filed 5/9/73 and Order 73-4, § 296-24-060, filed 5/7/73.]

WAC 296-24-065 First-aid kit. (1) All employers who employ men and women covered by the Industrial Safety and Health Act shall furnish first-aid kits as required by the division of safety, department of labor and industries, (RCW 51.36.030).

(2) First-aid supplies shall be readily accessible when required.

(3) In the absence of readily accessible first aid supplies such as first aid kits, first aid stations, first aid rooms or their equivalent, all crew trucks, power shovels, cranes, locomotives, loaders, dozers, logging trucks,

speeders, freight trucks and similar equipment shall be equipped with not less than a ten package first-aid kit.

(4) All crew vehicles used for transporting workmen shall be equipped with not less than a ten package first-aid kit. When more than five employees are being transported on any one trip, the kit shall be increased in size to comply with a 16, 24, or 36-package kit depending upon the number of personnel normally being transported.

(5) At least one first-aid kit shall be available on construction jobs, line crews, and other transient or short duration jobs. The size and quantity of first-aid kits, required to be located at any site, shall be determined by the number of personnel normally dependent upon each kit as outlined in the following table:

NUMBER OF PERSONNEL NORMALLY ASSIGNED TO WORKSITE	MINIMUM FIRST-AID SUPPLIES REQUIRED AT WORKSITE
1 - 50 persons	**First-Aid Kit**
1 - 5	10 package kit
6 - 15	16 package kit
16 - 30	24 package kit
31 - 50	36 package kit
51 - 200 persons	**First-Aid Station**
51 - 75	One 36 and one 10 package kit
76 - 100	One 36 and one 16 package kit
101 - 150	One 36 and one 24 package kit
151 - 200	Two 36 package kits
Over 200 Persons	**First-Aid Room** Refer to WAC 296-24-070

(6) Employers shall establish a procedure to assure that first-aid kits and required contents are maintained in a serviceable condition.

(7) First-aid kits shall contain at least the following items:

10 Package Kit

1 Pkg. Adhesive bandages, 1" (16 per pkg.)
1 Pkg. Bandage compress, 4" (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
1 Pkg. Triangular bandage, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
5 Pkgs. of consulting physician's choice**

16 Package Kit

1 Pkg. Absorbent gauze, 24" x 72" (1 per pkg.)
1 Pkg. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
2 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
7 Pkgs. of consulting physician's choice**

24 Package Kit

2 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
2 Pkgs. Bandage compresses, 4" (1 per pkg.)
1 Pkg. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
6 Pkgs. Triangular bandages (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
9 Pkgs. of consulting physician's choice**

36 Package Kit

4 Pkgs. Absorbent gauze, 24" x 72" (1 per pkg.)
2 Pkgs. Adhesive bandages, 1" (16 per pkg.)
5 Pkgs. Bandage compresses, 4" (1 per pkg.)
2 Pkgs. Eye dressing (1 per pkg.)
1 Pkg. Scissors* and tweezers (1 each per pkg.)
8 Pkgs. Triangular bandages, 40" (1 per pkg.)
1 Pkg. Antiseptic soap or pads (3 per pkg.)
13 Pkgs. of consulting physician's choice**

*Scissors shall be capable of cutting 2 layers of 15 oz. cotton cloth or its equivalent.

**First-aid kits shall be maintained at the ten, sixteen, twenty-four or thirty-six package level. In the event the consulting physician chooses not to recommend items, the department of labor and industries shall be contacted for recommended items to complete the kit.

(8) Where the eyes or body of any person may be exposed to injurious chemicals and/or materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided, within the work area, for immediate emergency use.

(9) When practical, a poster shall be fastened and maintained either on or in the cover of each first-aid kit and at or near all phones plainly stating, the phone numbers of available doctors, hospitals, and ambulance services within the district of the worksite.

(10) When required by the department, in addition to the first-aid kit which must be kept on the equipment or at the place of work, there shall be available within the closest practicable distance from the operations (not to exceed 1/2 mile) the following items:

1 set of arm and leg splints.
2 all wool blankets or blankets equal in strength and fire resistant (properly protected and marked).
1 stretcher.

[Order 74-27, § 296-24-065, filed 5/7/74; Order 73-5, § 296-24-065, filed 5/9/73 and Order 73-4, § 296-24-065, filed 5/7/73.]

WAC 296-24-067 First-aid station. (1) First-aid stations shall be located as close as practicable to the highest concentration of personnel.

(2) First-aid stations shall be well marked and available to personnel during all working hours.

(3) One person holding a valid first-aid certificate shall be responsible for the proper use and maintenance of the first-aid station.

(4) First-aid stations shall be equipped with a minimum of two first-aid kits, the size of which shall be dependent upon the number of personnel normally employed at the worksite. One first-aid kit may be a permanent wall-mounted kit, but in all cases the station shall be equipped with at least one portable first-aid kit.

(5) When required by the department, the station shall be equipped with two wool blankets and a stretcher in addition to first-aid kits.

(6) A roster, denoting the telephone numbers and addresses of doctors, hospitals and ambulance services available to the worksite, shall be posted at each first-aid station.

[Order 73-5, § 296-24-067, filed 5/9/73 and Order 73-4, § 296-24-067, filed 5/7/73.]

WAC 296-24-070 First-aid room. (1) A first-aid room meeting the requirements of this section shall be required when:

(a) A fixed establishment employs more than 200 employees at one central location,

EXCEPTION: The department may permit the employer to follow the requirements of WAC 296-24-060, 296-24-065 and 296-24-067 as appropriate when employees would be better served for first-aid purposes and the following conditions are present:

(i) In low hazard occupations such as retail clothing stores, banks, or general office work where exposure to manufacturing processes or heavy materials handling does not exist, and

(ii) Where the 200 or more employees have physically dispersed normal work stations which would result in excessive travel to the first-aid room. (Excessive travel shall mean travel of one quarter mile or more or three or more floors of vertical travel.)

(b) At construction sites which are expected to remain construction sites for six months or more.

(2) First-aid rooms shall be located as close as possible to the heaviest concentrated work area. They shall be identified in such a manner as to be easily recognizable as first-aid rooms.

(3) The first-aid room shall be well lighted and ventilated, kept clean and orderly, provided with hot and cold running water, and maintained in a fully-equipped condition.

(4) The first-aid room shall be manned and maintained by:

(a) A licensed physician, or

(b) A licensed or registered nurse, or

(c) An employee who:

(i) Holds a valid advanced first-aid certificate as recognized by the department,

(ii) Works in the vicinity of the first-aid room, and

(iii) Does not perform other work of the nature that is likely to affect adversely her/his ability to administer first-aid.

(5) First-aid rooms shall be equipped with items recommended by the consulting physician or plant medical officer and, as a minimum, should contain an adequate supply of the following:

Antiseptic soap
3/4" or 1" adhesive compresses
Adhesive knuckle bands
2" Bandage compresses
4" Bandage compresses
3" x 3" gauze pads
Assorted sizes of large gauze pads
2" roller bandages
3" roller bandages
4" roller bandages
Assorted adhesive tape rolls
Eye dressings
Ammonia inhalants
Burn ointment
Triangular bandages
Scissors, forceps, razor and blades, medicine droppers
Safety pins
Drinking cups
Rubbing alcohol
Absorbent cotton
Arm and leg splints
Antidotes for specific industrial poisons
Pressure points chart
Stretcher
Wool blankets and clean linen
Hot water bottles
Quick colds or ice bag
Emergency first-aid kit
A method of sterilizing instruments

(6) A poster shall be maintained on, or in the cover of, each first-aid cabinet and near each first-aid room phone. Such poster will state phone numbers of available doctors, hospitals, and ambulance services with in the employer's district.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-24-070, filed 6/17/81; Order 73-5, § 296-24-070, filed 5/9/73 and Order 73-4, § 296-24-070, filed 5/7/73.]

WAC 296-24-073 Safe place standards. (1) Each employer shall furnish to each of his employees a place of employment free from recognized hazards that are causing or likely to cause serious injury or death to his employees.

(2) Every employer shall furnish and use safety devices and safeguards, and shall adopt and use practices, means, methods, operations, and processes which are reasonably adequate to render such employment and place of employment safe. Every employer shall do every other thing reasonably necessary to protect the life and safety of employees.

(3) No employer shall require any employee to go or be in any employment or place of employment which is not safe.

(4) No employer shall fail or neglect:

(a) To provide and use safety devices and safeguards.

(b) To adopt and use methods and processes reasonably adequate to render the employment and place of employment safe.

(c) To do every other thing reasonably necessary to protect the life and safety of employees.

(5) No employer, owner, or lessee of any real property shall construct or cause to be constructed any place of employment that is not safe.

(6) No person shall do any of the following:

(a) Remove, displace, damage, destroy or carry off any safety device, safeguard, notice, or warning, furnished for use in any employment or place of employment.

(b) Interfere in any way with the use thereof by any other person.

(c) Interfere with the use of any method or process adopted for the protection of any employee, including himself, in such employment, or place of employment.

(d) Fail or neglect to do every other thing reasonably necessary to protect the life and safety of employees.

(e) Intoxicating beverages and narcotics shall not be permitted in or around work sites except in industries and business engaged in the production, distribution, and sale of intoxicating beverages and drugs. Workers under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to persons taking prescription drugs and narcotics as directed by a physician or dentist providing such use shall not endanger the worker or others.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-24-073, filed 12/11/84; Order 74-27, § 296-24-073, filed 5/7/74; Order 73-5, § 296-24-073, filed 5/9/73 and Order 73-4, § 296-24-073, filed 5/7/73.]

Part A-2

PERSONAL PROTECTIVE EQUIPMENT

WAC

296-24-075 Personal protective equipment.
296-24-07501 General requirements.
296-24-078 Eye and face protection.
296-24-07801 General.
296-24-084 Occupational head protection.
296-24-086 Personal flotation devices.
296-24-088 Occupational foot protection.
296-24-092 Electrical protective devices.
296-24-094 Lighting and illumination.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-081 Respiratory protection. [Order 73-5, § 296-24-081, filed 5/9/73 and Order 73-4, § 296-24-081, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240. Later promulgation, see chapter 296-62 WAC.

296-24-08101 Permissible practice. [Order 73-5, § 296-24-08101, filed 5/9/73 and Order 73-4, § 296-24-08101, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240.

296-24-08103 Requirements for a minimal acceptable program. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08103, filed 8/8/80; Order 73-5, § 296-24-08103, filed 5/9/73 and Order 73-4, § 296-24-08103, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17-.050 and 49.17.240.

296-24-08105 Selection of respirators. [Order 73-5, § 296-24-08105, filed 5/9/73 and Order 73-4, § 296-24-08105, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17-.040, 49.17.050 and 49.17.240.

296-24-08107 Air quality. [Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08107, filed 8/8/80; Order 73-5, § 296-24-08107, filed 5/9/73 and Order 73-4, § 296-24-08107, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17-.040, 49.17.050 and 49.17.240.

296-24-08109 Use of respirators. [Statutory Authority: RCW 49-.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-08109, filed 8/8/80; Order 73-5, § 296-24-08109, filed 5/9/73 and Order 73-4, § 296-24-08109, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

296-24-08111 Maintenance and care of respirators. [Order 73-5, § 296-24-08111, filed 5/9/73 and Order 73-4, § 296-24-08111, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

296-24-08113 Identification of gas mask canisters. [Order 73-5, § 296-24-08113, filed 5/9/73 and Order 73-4, § 296-24-08113, filed 5/7/73.] Repealed by 81-16-016 (Order 81-19), filed 7/27/81. Statutory Authority: 49.17.040, 49.17.050 and 49.17.240.

WAC 296-24-075 Personal protective equipment.

[Order 73-5, § 296-24-075, filed 5/9/73 and Order 73-4, § 296-24-075, filed 5/7/73.]

WAC 296-24-07501 General requirements.

(1) Application.

(a) Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee owned equipment. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed.

[Order 73-5, § 296-24-07501, filed 5/9/73 and Order 73-4, § 296-24-07501, filed 5/7/73.]

WAC 296-24-078 Eye and face protection.

[Order 73-5, § 296-24-078, filed 5/9/73 and Order 73-4, § 296-24-078, filed 5/7/73.]

WAC 296-24-07801 General. (1) Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors. No unprotected person shall knowingly be subjected to a hazardous environmental condition. Suitable eye protectors shall be provided where machines or operations present the hazard of flying objects, glare, liquids, injurious radiation, or a combination of these hazards.

(2) Protectors shall:

(a) Provide adequate protection against the particular hazards for which they are designed.

(b) Be reasonably comfortable when worn under the designated conditions.

(c) Fit snugly and shall not unduly interfere with the movements of the wearer.

(d) Be durable.

(e) Be capable of being disinfected.

(f) Be easily cleanable.

(3) Protectors should be kept clean and in good repair.

(4) Persons whose vision requires the use of corrective lenses in spectacles, and who are required by this standard to wear eye protection, shall wear goggles or spectacles of one of the following types:

(a) Spectacles whose protective lenses provide optical correction.

(b) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.

(c) Goggles that incorporate corrective lenses mounted behind the protective lenses.

(5) Every protector shall be distinctly marked to facilitate identification of the manufacturer.

(6) When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.

(7) Design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1–1968.

[Order 73–5, § 296–24–07801, filed 5/9/73 and Order 73–4, § 296–24–07801, filed 5/7/73.]

WAC 296-24-084 Occupational head protection. (1) Helmets for the protection of employees against impact and penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1–1969, Safety Requirements for Industrial Head Protection.

(2) Helmets for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2–1970.

(3) Persons working in the shops around machinery or in locations which present a hair catching or fire hazard shall wear caps or other type of head covering which completely covers the hair. Caps with metal buttons or metal visors shall not be worn around electrical hazards.

(4) Hard hats shall be worn by employees who work around or under scaffolds or other overhead structures, or who are otherwise exposed to the hazards of falling materials and propelled objects.

[Order 74–27, § 296–24–084, filed 5/7/74; Order 73–5, § 296–24–084, filed 5/9/73 and Order 73–4, § 296–24–084, filed 5/7/73.]

WAC 296-24-086 Personal flotation devices. (1) Employees working on, over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices.

(a) Employees are not considered exposed to the danger of drowning when;

(i) The water depth is known to be less than chest deep on the exposed individual;

(ii) When working behind standard height and strength guardrails;

(iii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iv) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.

(b) Prior to and after each use, personal flotation devices shall be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices shall not be used.

(c) To meet the approved criteria required by subdivision (1), a personal flotation device shall be approved by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or their equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard table of devices equivalent to personal flotation devices). Ski belt or inflatable type personal flotation devices are specifically prohibited.

(2) Life ring.

(a) Along docks, walkways or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with line attached shall be provided. The life rings shall be spaced at intervals not to exceed 200 feet and shall be kept in easily visible and readily accessible locations.

(b) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with line attached shall be provided in the immediate vicinity of the work assigned.

(c) Work assigned over water where the vertical drop from an accidental fall would exceed 50 feet, shall be subject to specific procedures as approved by the department.

(d) Lines attached to life rings shall be at least 90 feet in length, at least 1/4 inch in diameter and have a minimum breaking strength of 500 pounds.

(e) Life rings must be United States Coast Guard approved 30 inch size.

(f) Life rings and attached lines must be maintained to retain at least 75 percent of their designed buoyance and strength.

[Order 76-6, § 296-24-086, filed 3/1/76.]

WAC 296-24-088 Occupational foot protection. (1) Calks or other suitable footwear which will afford reasonable protection from slipping shall be worn while working on logs.

(a) Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

(2) Workmen who work in areas where there is a possibility of foot injury due to falling or rolling objects shall wear safety type footwear.

[Order 73-5, § 296-24-088, filed 5/9/73 and Order 73-4, § 296-24-088, filed 5/7/73.]

WAC 296-24-092 Electrical protective devices. (1) Rubber protective equipment for electrical workers shall conform to the requirements established in the American National Standards Institute Standards as specified in the following list:

Item	Standard
Rubber insulating gloves.	J6.6-1971.
Rubber matting for use around electric apparatus.	J6.7-1935 (R1971).
Rubber insulating blankets.	J6.4-1971.
Rubber insulating hoods.	J6.2-1950 (R1971).
Rubber insulating line hose.	J6.1-1950 (R1971).
Rubber insulating sleeves.	J6.5-1971.

(2) Where switches or fuses of more than 150 volts to ground are not guarded during ordinary operations, suitable insulating floors, mats or platforms shall be provided on which the operator must stand while handling the switches.

[Order 73-5, § 296-24-092, filed 5/9/73 and Order 73-4, § 296-24-092, filed 5/7/73.]

WAC 296-24-094 Lighting and illumination. Refer to WAC 296-62-09003 (General occupational health standards) which shall apply as minimum standards of illumination for industrial interiors.

[Order 74-27, § 296-24-094, filed 5/7/74.]

Part B-1

SANITATION, TEMPORARY LABOR CAMPS AND NONWATER CARRIAGE DISPOSAL SYSTEMS

WAC

296-24-120 Sanitation.
296-24-12001 Scope.
296-24-12002 Definitions.
296-24-12003 General requirements.
296-24-12005 Water supply.
296-24-12007 Toilet facilities.
296-24-12009 Washing facilities.
296-24-12011 Change rooms.
296-24-12017 Consumption of food and beverages on the premises.
296-24-12019 Waste disposal.
296-24-12021 Vermin control.
296-24-125 Temporary labor camps.
296-24-12501 Site.
296-24-12503 Shelter.
296-24-12505 Water supply.
296-24-12507 Toilet facilities.
296-24-12509 Sewage disposal facilities.
296-24-12511 Laundry, handwashing, and bathing facilities.
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296-24-12519 Insect and rodent control.
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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-12013 Lunchrooms. [Order 73-5, § 296-24-12013, filed 5/9/73 and Order 73-4, § 296-24-12013, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-12015 Food handling. [Order 73-5, § 296-24-12015, filed 5/9/73 and Order 73-4, § 296-24-12015, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-130 Nonwater carriage disposal systems. [Order 73-5, § 296-24-130, filed 5/9/73 and Order 73-4, § 296-24-130, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13001 Acceptable industrial disposal systems. [Order 73-5, § 296-24-13001, filed 5/9/73 and Order 73-4, § 296-24-13001, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13003 Privy specifications. [Order 73-5, § 296-24-13003, filed 5/9/73 and Order 73-4, § 296-24-13003, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13005 Chemical toilet specifications. [Order 73-5, § 296-24-13005, filed 5/9/73 and Order 73-4, § 296-24-13005, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13007 Seepage pit construction. [Order 73-5, § 296-24-13007, filed 5/9/73 and Order 73-4, § 296-24-13007, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13009 Combustion toilet. [Order 73-5, § 296-24-13009, filed 5/9/73 and Order 73-4, § 296-24-13009, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13011 Recirculating toilet specifications. [Order 73-5, § 296-24-13011, filed 5/9/73 and Order 73-4, § 296-24-13011, filed 5/9/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-13013 Portable toilet construction. [Order 73-5, § 296-24-13013, filed 5/9/73 and Order 73-4, § 296-24-13013, filed 5/7/73.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-120 Sanitation. NOTE: Rules and regulations of the state board of health governing sanitation of places of work shall be complied with by every employer, and shall be enforced as provided for by statute law (RCW 43.20.050).

[Order 73-5, § 296-24-120, filed 5/9/73 and Order 73-4, § 296-24-120, filed 5/7/73.]

WAC 296-24-12001 Scope. This scope includes all sections of WAC 296-24-120 in the numbering and applies to all permanent places of employment except where domestic, mining, or agricultural work only is performed. Measures for the control of toxic materials are considered to be outside the scope of this section.

[Order 74-27, § 296-24-12001, filed 5/7/74; Order 73-5, § 296-24-12001, filed 5/9/73 and Order 73-4, § 296-24-12001, filed 5/7/73.]

WAC 296-24-12002 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-120 in the section number.

(1) "Lavatory" means a basin or similar vessel used exclusively for washing of the hands, arms, face and head.

(2) "Nonwater carriage toilet facility" means a toilet facility not connected to a sewer.

(3) "Number of employees" means, unless otherwise specified, the maximum number of employees present at any one time on a regular shift.

(4) "Personal service room" means a room used for activities not directly connected with the production or service function performed by the establishment. Such activities include but are not limited to, first aid, medical services, dressing, showering, toilet use, washing, and eating.

(5) "Potable water" means water which meets the quality standards prescribed in the U.S. Public Health Service Drinking Water Standards, published in 42 CFR part 72, or water which is approved for drinking purposes by the state or local authority having jurisdiction.

(6) "Toilet facility" means a fixture maintained within a toilet room for the purpose of defecation or urination, or both.

(7) "Toilet room" means a room maintained within or on the premises of any place of employment, containing toilet facilities for use by employees.

(8) "Toxic material" means a material in concentration or amount which exceeds the applicable limit established by a standard, such as chapter 296-62 WAC or, in the absence of an applicable standard, which is of such toxicity so as to constitute a recognized hazard that is causing or is likely to cause death or serious physical harm.

(9) "Urinal" means a toilet facility maintained within a toilet room for the sole purpose of urination.

(10) "Water closet" means a toilet facility maintained within a toilet room for the purpose of both defecation and urination and which is flushed with water.

(11) "Wet process" means any process or operation in a workroom which normally results in surfaces upon which employees may walk or stand becoming wet.

[Order 74-27, § 296-24-12002, filed 5/7/74.]

WAC 296-24-12003 General requirements. Housekeeping.

(1) All places of employment shall be kept clean to the extent that the nature of the work allows.

(2) The floor of every workroom shall be maintained so far as practicable in a dry condition. Where wet processes are used, drainage shall be maintained and false floors, platforms, mats, or other dry standing places shall be provided, where practicable, or appropriate waterproof footgear shall be provided.

(3) To facilitate cleaning, every floor, working place, and passageway shall be kept free from protruding nails, splinters, loose boards and unneccessary holes and openings.

(4) Cleaning and sweeping shall be done in such a manner as to minimize the contamination of the air with dust and so far as is practicable, shall be done outside of working hours.

[Order 74-27, § 296-24-12003, filed 5/7/74; Order 73-5, § 296-24-12003, filed 5/9/73 and Order 73-4, § 296-24-12003, filed 5/7/73.]

WAC 296-24-12005 Water supply. (1) Potable water.

(a) Potable water shall be provided in all places of employment, for drinking, washing of the person, cooking, washing of foods, washing of cooking or eating utensils, washing of food preparation or processing premises, and personal service rooms.

(b) Portable drinking water dispensers shall be designed, constructed, and serviced so that sanitary conditions are maintained, shall be capable of being closed, and shall be equipped with a tap.

(c) Open containers such as barrels, pails, or tanks for drinking water from which the water must be dipped or poured, whether or not they are fitted with a cover, are prohibited.

(d) A common drinking cup and other common utensils are prohibited.

(2) Nonpotable water.

(a) Outlets for nonpotable water, such as water for industrial or firefighting purposes shall be posted or otherwise marked in a manner that will indicate clearly that the water is unsafe and is not to be used for drinking, washing of the person, cooking, washing of food, washing of cooking or eating utensils, washing of food preparation or processing premises, or personal service rooms, or for washing clothes.

(b) Construction of nonpotable water systems or systems carrying any other nonpotable substance shall be such as to prevent backflow or backsiphonage into a potable water system.

Nonpotable water shall not be used for washing any portion of the person, cooking or eating utensils, or clothing. Nonpotable water may be used for cleaning work premises, other than food processing and preparation premises and personal service rooms: *Provided*, That this nonpotable water does not contain concentrations of chemicals, fecal coliform, or other substances which could create unsanitary conditions or be harmful to employees.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-12005, filed 6/11/82; Order 74-27, § 296-24-12005, filed 5/7/74; Order 73-5, § 296-24-12005, filed 5/9/73 and Order 73-4, § 296-24-12005, filed 5/7/73.]

WAC 296-24-12007 Toilet facilities. (1) General. (a) Except as otherwise indicated in this section, toilet facilities, in toilet rooms separate for each sex, shall be

provided in all places of employment in accordance with Table B–1 of this section. The number of facilities to be provided for each sex shall be based on the number of employees of that sex for whom the facilities are furnished. Where toilet rooms will be occupied by no more than one person at a time, can be locked from the inside, and contain at least one water closet, separate toilet rooms for each sex need not be provided. Where such single–occupancy rooms have more than one toilet facility, only one such facility in each toilet room shall be counted for the purpose to Table B–1.

TABLE B–1

Number of employees:	Minimum number of water closets
1 to 15	1
16 to 35	2
36 to 55	3
56 to 80	4
81 to 110	5
111 to 150	6
Over 150	One additional fixture for each additional 40 employees

Where toilet facilities will not be used by women, urinals may be provided instead of water closets in such cases shall not be reduced to less than 2/3 of the minimum specified.

(b) The requirements of subdivision (a) of this subsection do not apply to mobile crews or to normally unattended work locations so long as employees working at these locations have transportation immediately available to nearby toilet facilities which meet the other requirements of this section.

(c) The sewage disposal method shall not endanger the health of employees.

(d) Toilet paper with holder shall be provided for every water closet.

(2) Construction of toilet rooms. Each water closet shall occupy a separate compartment with a door and walls or partitions between fixtures sufficiently high to assure privacy.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–12007, filed 12/24/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–12007, filed 11/13/80; Order 74–27, § 296–24–12007, filed 5/7/74; Order 73–5, § 296–24–12007, filed 5/9/73 and Order 73–4, § 296–24–12007, filed 5/7/73.]

WAC 296–24–12009 Washing facilities. (1) General. Facilities for maintaining personal cleanliness shall be provided in every place of employment pursuant to the provisions of this section. These shall be convenient for the employees for whom they are provided and shall be maintained in a sanitary condition.

(2) Lavatories.

(a) Lavatories shall be made available in all places of employment. The requirements of this subsection do not apply to mobile crews or to normally unattended work locations if employees working at these locations have transportation readily available to nearby washing facilities which meet the other requirements of this section.

(b) Each lavatory shall be provided with hot and cold running water, or tepid running water.

(c) Hand soap or similar cleansing agents shall be provided.

(d) Individual hand towels or sections thereof, of cloth or paper, warm air blowers or clean individual sections of continuous cloth toweling, convenient to the lavatories, shall be provided.

(3) Showers.

(a) Whenever showers are required by a particular standard, the showers shall be provided, in accordance with subdivisions (b) through (e) of this subsection.

(b) One shower shall be provided for each 10 employees of each sex, or numerical fraction thereof, who are required to shower during the same shift.

(c) Body soap or other appropriate cleansing agents convenient to the showers shall be provided as specified in this section.

(d) Showers shall be provided with hot and cold water feeding a common discharge line.

(e) Employees who use showers shall be provided with individual clean towels.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–24–12009, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–12009, filed 11/13/80; Order 74–27, § 296–24–12009, filed 5/7/74; Order 73–5, § 296–24–12009, filed 5/9/73 and Order 73–4, § 296–24–12009, filed 5/7/73.]

WAC 296–24–12011 Change rooms. (1) Whenever employees are required by a particular standard to wear protective clothing because of the possibility of contamination with toxic materials, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing shall be provided.

(2) Clothes drying facilities. Where working clothes are provided by the employer and become wet or are washed between shifts, provisions shall be made to insure that such clothing is dry before reuse.

[Order 74–27, § 296–24–12011, filed 5/7/74; Order 73–5, § 296–24–12011, filed 5/9/73 and Order 73–4, § 296–24–12011, filed 5/7/73.]

WAC 296–24–12017 Consumption of food and beverages on the premises. (1) Application. This section shall apply only where employees are permitted to consume food or beverages, or both, on the premises.

(2) Eating and drinking areas. No employee shall be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

(3) In every establishment where there is exposure to injurious dusts or other toxic materials, a separate lunchroom shall be maintained unless it is convenient for the employees to lunch away from the premises. The following number of square feet per person, based on the maximum number of persons using the room at one time, shall be required:

Number of persons	Square feet per person
25 and less	13
26–74	12
75–149	11
150 and over	10

(4) Waste disposal containers. Receptacles, constructed of smooth, corrosion resistant, easily cleanable, or disposable materials, shall be provided and used for the disposal of waste food. The number, size, and location of such receptacles shall encourage their use and not result in overfilling. They shall be emptied not less frequently than once each working day, unless unused, and shall be maintained in a clean and sanitary condition. Receptacles shall be provided with a solid tight–fitting cover unless sanitary conditions can be maintained without use of a cover.

(5) Sanitary storage. No food or beverages shall be stored in toilet rooms or in an area exposed to a toxic material.

(6) Food handling. All employee food service facilities and operations shall be carried out in accordance with sound hygienic principles. In all places of employment where all or part of the food service is provided, the food dispensed shall be wholesome, free from spoilage, and shall be processed, prepared, handled, and stored in such a manner as to be protected against contamination.

[Order 76–6, § 296–24–12017, filed 3/1/76; Order 74–27, § 296–24–12017, filed 5/7/74.]

WAC 296–24–12019 Waste disposal. (1) Any receptacle used for putrescible solid or liquid waste or refuse shall be so constructed that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition. Such a receptacle shall be equipped with a solid tight–fitting cover, unless it can be maintained in a sanitary condition without a cover. This requirement does not prohibit the use of receptacles which are designed to permit the maintenance of a sanitary condition without regard to the aforementioned requirements.

(2) All sweepings solid or liquid wastes, refuse, and garbage shall be removed in such a manner as to avoid creating a menace to health and as often as necessary or appropriate to maintain the place of employment in a sanitary condition.

[Order 74–27, § 296–24–12019, filed 5/7/74.]

WAC 296–24–12021 Vermin control. Every building shall be so constructed, equipped, and maintained so as to restrict the entrance or harborage of rodents, insects, and other vermin. A continuing and effective extermination program shall be instituted where their presence is detected.

[Order 74–27, § 296–24–12021, filed 5/7/74.]

WAC 296–24–125 Temporary labor camps.

[Order 73–5, § 296–24–125, filed 5/9/73 and Order 73–4, § 296–24–125, filed 5/7/73.]

WAC 296–24–12501 Site. (1) All sites used for camps shall be adequately drained. They shall not be subject to periodic flooding, nor located within 200 feet of swamps, pools, sink holes, or other surface collections of water unless such quiescent water surfaces can be subjected to mosquito control measures. The camp shall be located so the drainage from and through the camp will not endanger any domestic or public water supply. All sites shall be graded, ditched, and rendered free from depressions in which water may become a nuisance.

(2) All sites shall be adequate in size to prevent overcrowding of necessary structures. The principal camp area in which food is prepared and served and where sleeping quarters are located shall be at least 500 feet from any area in which livestock is kept.

(3) The grounds and open areas surrounding the shelters shall be maintained in a clean and sanitary condition free from rubbish, debris, waste paper, garbage, or other refuse.

(4) Whenever the camp is closed for the season or permanently, all garbage, manure, and other refuse shall be collected and so disposed of as to prevent nuisance. All abandoned privy pits shall be filled with earth and the grounds and buildings left in a clean and sanitary condition. If privy buildings remain, they shall be locked or otherwise secured to prevent entrance.

[Order 73–5, § 296–24–12501, filed 5/9/73 and Order 73–4, § 296–24–12501, filed 5/7/73.]

WAC 296–24–12503 Shelter. (1) Every shelter in the camp shall be constructed in a manner which will provide protection against the elements.

(2) Each room used for sleeping purposes shall contain at least 50 square feet of floor space for each occupant. At least a 7–foot ceiling shall be provided.

(3) Beds, cots, or bunks, and suitable storage facilities such as wall lockers for clothing and personal articles shall be provided in every room used for sleeping purposes. Such beds or similar facilities shall be spaced not closer than 36 inches both laterally and end to end, and shall be elevated at least 12 inches from the floor. If double–deck bunks are used, they shall be spaced not less than 48 inches both laterally and end to end. The minimum clear space between the lower and upper bunk shall be not less than 27 inches. Triple–deck bunks are prohibited.

(4) The floors of each shelter shall be constructed of wood, asphalt, or concrete. Wooden floors shall be of smooth and tight construction. The floors shall be kept in good repair.

(5) All wooden floors shall be elevated not less than 1 foot above the ground level at all points to prevent dampness and to permit free circulation of air beneath.

(6) Nothing in this section shall be construed to prohibit "banking" with earth or other suitable material around the outside walls in areas subject to extreme low temperatures.

(7) All living quarters shall be provided with windows the total of which shall be not less than one–tenth of the floor area. At least one–half of each window shall be so

constructed that it can be opened for purposes of ventilation.

(8) All exterior openings shall be effectively screened with 16–mesh material. All screen doors shall be equipped with self–closing devices.

(9) Each dwelling unit shall have at least 70 square feet of floor space for the first occupant and at least 50 square feet of floor space for each additional occupant. A separate sleeping area shall be provided for the husband and wife in all family units in which one or more children over six years of age are housed.

(10) In camps where cooking facilities are used in common, stoves (in ratio of one stove to 10 persons or one stove to two families) shall be provided in an enclosed and screened shelter. Sanitary facilities shall be provided for storing and preparing food.

(11) If a camp is used during cold weather, adequate heating equipment shall be provided.

Note: All heating, cooking, and water heating equipment shall be installed in accordance with state and local ordinances, codes, and regulations governing such installations.

[Order 73–5, § 296–24–12503, filed 5/9/73 and Order 73–4, § 296–24–12503, filed 5/7/73.]

WAC 296–24–12505 Water supply. (1) An adequate and convenient water supply, approved by the appropriate health authority, shall be provided in each camp for drinking, cooking, bathing, and laundry purposes.

(2) A water supply shall be deemed adequate if it is capable of delivering 35 gallons per person per day to the campsite at a peak rate of 2 1/2 times the average hourly demand.

(3) The distribution lines shall be capable of supplying water at normal operating pressures to all fixtures for simultaneous operation. Water outlets shall be distributed throughout the camp in such a manner that no shelter is more than 100 feet from a yard hydrant if water is not piped to the shelters.

(4) Where water under pressure is available, one or more drinking fountains shall be provided for each 100 occupants or fraction thereof. The construction of drinking fountains shall comply with ANSI Standard Specifications for Drinking Fountains, Z4.2–1942. Common drinking cups are prohibited.

[Order 73–5, § 296–24–12505, filed 5/9/73 and Order 73–4, § 296–24–12505, filed 5/7/73.]

WAC 296–24–12507 Toilet facilities. (1) Toilet facilities adequate for the capacity of the camp shall be provided.

(2) Each toilet room shall be located so as to be accessible without any individual passing through any sleeping room. Toilet rooms shall have a window not less than 6 square feet in area opening directly to the outside area or otherwise be satisfactorily ventilated. All outside openings shall be screened with 16–mesh material. No fixture, water closet, chemical toilet, or urinal shall be located in a room used for other than toilet purposes.

(3) A toilet room shall be located within 200 feet of the door of each sleeping room. No privy shall be closer than 100 feet to any sleeping room, dining room, lunch area, or kitchen.

(4) Where the toilet rooms are shared, such as in multi–family shelters and in barracks type facilities, separate toilet rooms shall be provided for each sex. These rooms shall be distinctly marked "for men" and "for women" by signs printed in English and in the native language of the persons occupying the camp, or marked with easily understood pictures or symbols. If the facilities for each sex are in the same building, they shall be separated by solid walls or partitions extending from the floor to the roof or ceiling.

(5) Where toilet facilities are shared, the number of water closets or privy seats provided for each sex shall be based on the maximum number of persons of that sex which the camp is designed to house at any one time, in the ration of one such unit to each 15 persons, with a minimum of two units for any shared facility.

(6) Urinals shall be provided on the basis of one unit or 2 linear feet of urinal trough for each 25 men. The floor from the wall and for a distance not less than 15 inches measured from the outward edge of the urinals shall be constructed of materials impervious to moisture. Where water under pressure is available, urinals shall be provided with an adequate water flush. Urinal troughs in privies shall drain freely into the pit or vault and the construction of this drain shall be such as to exclude flies and rodents from the pit.

(7) Every water closet installed after the effective date of these standards shall be located in a toilet room.

(8) Each toilet room shall be lighted naturally, or artificially at all hours of the day and night as specified in WAC 296–24–12513.

(9) An adequate supply of toilet paper shall be provided in each privy, water closet, or chemical toilet compartment.

(10) Privies and toilet rooms shall be kept in a sanitary condition. They shall be cleaned at least daily.

[Order 73–5, § 296–24–12507, filed 5/9/73 and Order 73–4, § 296–24–12507, filed 5/7/73.]

WAC 296–24–12509 Sewage disposal facilities. In camps where public sewers are available, all sewer lines and floor drains from buildings shall be connected thereto.

[Order 73–5, § 296–24–12509, filed 5/9/73 and Order 73–4, § 296–24–12509, filed 5/7/73.]

WAC 296–24–12511 Laundry, handwashing, and bathing facilities. (1) Laundry, handwashing, and bathing facilities shall be provided in the following ratio:

(a) Handwash basin per family shelter or per six persons in shared facilities.

(b) Shower head for every 10 persons.

(c) Laundry tray or tub for every 30 persons.

(d) Slop sink in each building used for laundry, hand washing, and bathing.

(2) Floors shall be of smooth finish but not slippery materials; they shall be impervious to moisture. Floor drains shall be provided in all shower baths, shower

rooms, or laundry rooms to remove waste water and facilitate cleaning. All junctions of the curbing and the floor shall be coved. The walls and partitions of shower rooms shall be smooth and impervious to the height of splash.

(3) An adequate supply of hot and cold running water shall be provided for bathing and laundry purposes. Facilities for heating water shall be provided.

(4) Every service building shall be provided with equipment capable of maintaining a temperature of at least 70°F. during cold weather.

(5) Facilities for drying clothes shall be provided.

(6) All service buildings shall be kept clean.

[Order 73-5, § 296-24-12511, filed 5/9/73 and Order 73-4, § 296-24-12511, filed 5/7/73.]

WAC 296-24-12513 Lighting. Where electric service is available, each habitable room in a camp shall be provided with at least on ceiling-type light fixture and at least one separate floor-or wall-type convenience outlet. Laundry and toilet rooms and rooms where people congregate shall contain at least one ceiling-or wall-type fixture. Light levels in toilet and storage rooms shall be at least 20 foot-candles 30 inches from the floor. Other rooms, including kitchens and living quarters, shall be at least 30 foot-candles 30 inches from the floor.

[Order 73-5, § 296-24-12513, filed 5/9/73 and Order 73-4, § 296-24-12513, filed 5/7/73.]

WAC 296-24-12515 Refuse disposal. (1) Fly-tight, rodent-tight, impervious, cleanable or single service containers, approved by the state board of health shall be provided for the storage of garbage. At least one such container shall be provided for each family shelter and shall be located within 100 feet of each shelter on a wooden, metal, or concrete stand.

(2) Garbage containers shall be kept clean.

(3) Garbage containers shall be emptied when full, but not less than twice a week.

[Order 73-5, § 296-24-12515, filed 5/9/73 and Order 73-4, § 296-24-12515, filed 5/7/73.]

WAC 296-24-12517 Construction and operation of kitchens, dining hall, and feeding facilities. (1) In all camps where central dining or multiple family feeding operations are permitted or provided, the food handling facilities shall comply with the requirements of the "Food Service Sanitation Ordinance and Code," Part V of the *Food Service Sanitation Manual*, U.S. Public Health Service Publication 934 (1965).

(2) A properly constructed kitchen and dining hall adequate in size, separate from the sleeping quarters of any of the workers or their families, shall be provided in connection with all food handling facilities. There shall be no direct opening from living or sleeping quarters into a kitchen or dining hall.

(3) No person with any communicable disease shall be employed or permitted to work in the preparation, cooking, serving, or other handling of food, foodstuffs, or materials used therein, in any kitchen or dining room operated in connection with a camp or regularly used by persons living in a camp.

[Order 73-5, § 296-24-12517, filed 5/9/73 and Order 73-4, § 296-24-12517, filed 5/7/73.]

WAC 296-24-12519 Insect and rodent control. Effective measures shall be taken to prevent infestation by and harborage of animal or insect vectors or pests.

[Order 73-5, § 296-24-12519, filed 5/9/73 and Order 73-4, § 296-24-12519, filed 5/7/73.]

WAC 296-24-12521 First aid. (1) Adequate first-aid facilities approved by a health authority shall be maintained and made available in every labor camp for the emergency treatment of injured persons.

(2) Such facilities shall be in charge of a person trained to administer first aid and shall be readily accessible for use at all times.

[Order 73-5, § 296-24-12521, filed 5/9/73 and Order 73-4, § 296-24-12521, filed 5/7/73.]

WAC 296-24-12523 Reporting communicable disease. (1) It shall be the duty of the camp superintendent to report immediately to the local health officer the name and address of any individual in the camp known to have or suspected of having a communicable disease.

(2) Whenever there shall occur in any camp a case of suspected food poisoning or an unusual prevalence of any illness in which fever, diarrhea, sore throat, vomiting, or jaundice is a prominent symptom, it shall be the duty of the camp superintendent to report immediately the existence of the outbreak to the local health officer or state board of health by telegram or telephone.

[Order 73-5, § 296-24-12523, filed 5/9/73 and Order 73-4, § 296-24-12523, filed 5/7/73.]

Part B-2

SAFETY COLOR CODE FOR MARKING PHYSICAL HAZARDS, ETC., WINDOW WASHING

WAC

296-24-135 Safety color code for marking physical hazards.
296-24-13501 Color identification.
296-24-140 Specifications for accident prevention signs and tags.
296-24-14001 Scope.
296-24-14003 Definitions.
296-24-14005 Classification of signs according to use.
296-24-14007 Sign design and colors.
296-24-14009 Sign wordings.
296-24-14011 Accident prevention tags.
296-24-145 Window washing.
296-24-14501 Definitions.
296-24-14503 Application.
296-24-14505 Protection of persons engaged at window cleaning.
296-24-14507 General.
296-24-14509 Belt terminals, anchors and bolts.
296-24-14511 Belts.
296-24-14513 Anchor installations.
296-24-14515 Reversible and pivot windows.
296-24-14517 Ladders.
296-24-14519 Boatswain's chairs.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-13503 Color specifications. [Order 73-5, § 296-24-13503, filed 5/9/73 and Order 73-4, § 296-24-13503, filed

5/7/73.] Repealed by 83-15-017 (Order 83-19), filed 7/13/83, effective 9/12/83. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-135 Safety color code for marking physical hazards.

[Order 73-5, § 296-24-135, filed 5/9/73 and Order 73-4, § 296-24-135, filed 5/7/73.]

WAC 296-24-13501 Color identification. (1) Red. Red shall be the basic color for the identification of:

(a) Fire protection equipment and apparatus, except motorized apparatus, as used on roads.

(b) Danger. Safety cans or other portable containers of flammable liquids having a flashpoint at or below 80°F. table containers of flammable liquids (open cup tester), excluding shipping containers, shall be painted red with some additional clearly visible identification either in the form of a yellow band around the can or the name of the contents conspicuously stenciled or painted on the can in yellow. Red lights shall be provided at barricades and at temporary obstructions, as specified in ANSI Safety Code for Building Construction, A10.2-1944. Danger signs shall be painted red.

(c) Stop. Emergency stop bars on hazardous machines such as rubber mills, wire blocks, flat work ironers, etc., shall be red. Stop buttons or electrical switches used for emergency stopping of machinery shall be red.

(2) Yellow. Yellow shall be the basic color for designating caution and for marking physical hazards such as: Striking against, stumbling, falling, tripping, and "caught in between." Solid yellow, yellow and black stripes, yellow and black checkers (or yellow with suitable contrasting background) should be used interchangeably, using the combination which will attract the most attention in the particular environment. Yellow shall be the basic color for designating caution, limited to warning against the starting, the use of, or the movement of equipment under repair or being worked upon.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-24-13501, filed 6/11/82; Order 73-5, § 296-24-13501, filed 5/9/73 and Order 73-4, § 296-24-13501, filed 5/7/73.]

WAC 296-24-140 Specifications for accident prevention signs and tags.

[Order 73-5, § 296-24-140, filed 5/9/73 and Order 73-4, § 296-24-140, filed 5/7/73.]

WAC 296-24-14001 Scope. (1) These specifications apply to the design, application, and use of signs or symbols (as included in WAC 296-24-14005 through 296-24-14009) intended to indicate and, insofar as possible, to define specific hazards of a nature such that failure to designate them may lead to accidental injury to workers. These specifications are intended to cover all safety signs except those designed for streets, highways, railroads, and marine regulations. These specifications do not apply to plant bulletin boards or to safety posters.

(2) All new signs and replacements of old signs after August 27, 1971 shall be in accordance with these specifications.

[Order 76-6, § 296-24-14001, filed 3/1/76; Order 73-5, § 296-24-14001, filed 5/9/73 and Order 73-4, § 296-24-14001, filed 5/7/73.]

WAC 296-24-14003 Definitions. As used in this section, the word "sign" refers to a surface on which letters or other markings appear, prepared for the warning of, or safety instructions of, industrial workers who may be exposed to hazards. Excluded from this definition, however, are news releases, displays commonly known as safety posters, and bulletins used for employee education.

[Order 73-5, § 296-24-14003, filed 5/9/73 and Order 73-4, § 296-24-14003, filed 5/7/73.]

WAC 296-24-14005 Classification of signs according to use. (1) Danger signs.

(a) Danger signs should be used only where an immediate hazard exists. There shall be no variation in the type of design or signs posted to warn of specific dangers and radiation hazards.

(b) All employees shall be instructed that danger signs indicate immediate danger and that special precautions are necessary.

(2) Caution signs.

(a) Caution signs shall be used only to warn against potential hazards or to caution against unsafe practices.

(b) All employees shall be instructed that caution signs indicate a possible hazard against which proper precaution should be taken.

(3) Safety instruction signs. Safety instruction signs shall be used where there is a need for general instructions and suggestions relative to safety measures.

[Order 73-5, § 296-24-14005, filed 5/9/73 and Order 73-4, § 296-24-14005, filed 5/7/73.]

WAC 296-24-14007 Sign design and colors. (1) All signs shall be furnished with rounded or blunt corners and shall be free form sharp edges, burrs, splinters, or other sharp projections. The ends or heads of bolts or other fastening devices shall be located in such a way that they do not constitute a hazard.

(2) Danger signs.

(a) The colors red, black, and white shall be those of opaque glossy samples as specified in Table 1 of Fundamental Specification of Safety Colors for CIE Standard Source "C," American National Standard Z53.1-1971.

(b) Standard proportions shall be as indicated in Table J-1, and format shall be as in Fig. J-1.

(3) Radiation warning signs.

(a) Standard color of the background shall be yellow; the panel, reddish purple with yellow letters; the symbol, reddish purple; any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1-1971.

(b) The standard symbol shall be as in Figure J-3. Method of dimensioning, design, and orientation of the standard symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated. The symbol shall be prominently displayed, and of a size consistent with the size of the equipment or material or area to which it is attached.

(c) Format shall be as in Figure J–2. Sign proportions shall be the same as those for danger signs in Table J–1.

(4) Caution signs.

(a) Standard color of the background shall be yellow; and the panel, black with yellow letters. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1–1971.

(b) Standard proportions shall be as indicated in Table J–2, and format shall be as in Figure J–4.

(5) Exit signs. Exit signs shall be in accordance with WAC 296–24–56531.

(6) Safety instruction signs.

(a) Standard color of the background shall be white; and the panel, green with white letters. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard, Z53.1–1971.

(b) Standard proportions shall be as indicated in Table J–3, and format shall be as in Figure J–5.

(7) Directional signs.

(a) Standard color of the background shall be white; and the panel, black with white directional symbol. Any letters used against the white background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1–1971.

(b) Standard proportions shall be as indicated in Table J–4, and format shall be as in Figure J–6.

(8) In–plant traffic signs. Regulatory and control signs required for the safe movement of vehicles and pedestrians on thoroughfares on plant property shall conform to the standards established in American National Standard Manual on Uniform Traffic Control Devices for Streets and Highways, D6.1–1971.

(9) Informational signs. Blue shall be the standard color for informational signs. It may be used as the background color for the complete sign or as a panel at the top of such types of "notice" signs, which have a white background. The colors shall be those of opaque glossy samples as specified in Table 1 of American National Standard Z53.1–1971.

(10) Slow–moving vehicle emblem. This emblem (see Fig. J–7) consists of a fluorescent yellow–orange triangle with a dark red reflective border. The yellow–orange fluorescent triangle is a highly visible color for daylight exposure. The reflective border defines the shape of the fluorescent color in daylight and creates a hollow red triangle in the path of motor vehicle headlights at night. The emblem is intended as a unique identification for, and it shall be used only, on vehicles which by design move slowly (25 m.p.h. or less) on the public roads. The emblem is not a clearance marker for wide machinery nor is it intended to replace required lighting or marking of slow–moving vehicles. Neither the color film pattern and its dimensions nor the backing shall be altered to permit use of advertising or other markings. The material, location, mounting, etc., of the emblem shall be in accordance with the American Society of Agricultural Engineers Emblem for Identifying Slow–Moving Vehicles, ASAE R276, 1967, or ASAE S276.2 (ANSI B114.1–1971).

(11) Symbols. Symbols used on signs shall follow recognized practices, such as in Figure J–8. For radioactive materials, see symbol in Figure J–3.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–13–045 (Order 82–22), § 296–24–14007, filed 6/11/82; Order 73–5, § 296–24–14007, filed 5/9/73 and Order 73–4, § 296–24–14007, filed 5/7/73.]

WAC 296–24–14009 Sign wordings. (1) Examples of wordings. The lists in (3) through (7) of this section are intended to serve as a guide for choosing the correct sign design for the message to be displayed.

(2) Nature of wording. The wording of any sign should be easily read and concise. The sign should contain sufficient information to be easily understood. The wording should make a positive, rather than negative suggestion and should be accurate in fact.

(3) Danger signs.

Danger—Keep off, electric current.
Danger—No smoking, matches, or open lights.
Danger—Men working above.
Danger—Not room enough here to clear men on cars.
Danger—Keep away.
Danger—Men in boiler.
Danger—Insufficient clearance.
Danger—2,300 volts.
Danger—Keep out.
Danger—Crane overhead.
Danger—Keep off.

(4) Biological hazard signs. The biological hazard warning shall be used to signify the actual or potential presence of a biohazard and to identify equipment, containers, rooms, materials, experimental animals, or combinations thereof, which contain, or are contaminated with, viable hazardous agents. For the purpose of this subdivision the term "biological hazard," or "biohazard," shall include only those infectious agents presenting a risk or potential risk to the well–being of man. The biohazard symbol shall be designed and proportioned as illustrated in Figure J–9. The symbol design shall be a fluorescent orange or orange–red color. Background color is optional as long as there is sufficient contrast for the symbol to be clearly defined. Appropriate wording may be used in association with the symbol to indicate the nature or identity of the hazard, name of individual responsible for its control, precautionary information, etc., but never should this information be superimposed on the symbol.

(5) Caution signs.

Caution—Do not operate, men working on repairs.
Caution—Hands off switch, men working on line.
Caution—Working on machines, do not start.
Caution—Goggles must be worn when operating this machine.
Caution—This door must be kept closed.
Caution—Electric trucks, go slow.
Caution—This space must be kept clear at all times.

Caution—Stop machinery to clean, oil, or repair.
Caution—Keep aisles clear.
Caution—Operators of this machine shall wear snug fitting clothing—No gloves.
Caution—Close clearance.
Caution—Watch your step.
Caution—Electric fence.

(6) Safety instruction signs.

Report all injuries to the first-aid room at once.
Walk—Don't run.
Report all injuries no matter how slight.
Think, if safe go ahead.
Make your work place safe before starting the job.
Report all unsafe conditions to your foreman.
Help keep this plant safe and clean.

(7) Directional signs.

This way out (below arrow panel).
This way (inside arrow) out (below arrow panel).
Fire exit (below arrow panel).
Fire (inside arrow) extinguisher (below arrow panel).
To the (inside arrow) fire escape (below arrow panel).
To the (inside arrow) first aid (below arrow panel).
Manway (below arrow panel).
This way to (inside arrow) first-aid room (below arrow panel).

(8) Informational signs.

No trespassing under penalty of the law.
This elevator is for freight only, not for passengers.
No admittance except to employees on duty.
No admittance.
No admittance, apply at office.
No trespassing.
Men.
Women.
For employees only.
Office.

Note: When sign wordings such as those listed in this section are contemplated, care should be taken to be sure that they are suitable for the particular location at which the sign is to be placed and that wording meets the requirements of the intended purpose. When there is a reasonable doubt, a sign of a standard design should be used.

[Order 73-5, § 296-24-14009, filed 5/9/73 and Order 73-4, § 296-24-14009, filed 5/7/73.]

WAC 296-24-14011 Accident prevention tags. (1) Scope and purpose.

(a) The tags are a temporary means of warning all concerned of a hazardous condition, defective equipment, radiation hazards, etc. The tags are not to be considered as a complete warning method, but should be used until a positive means can be employed to eliminate the hazard; for example, a "do not start" tag on power equipment shall be used for a few moments or a very short time until the switch in the system can be locked out; a "defective equipment" tag shall be placed on a damaged ladder and immediate arrangements made for the ladder to be taken out of service and sent to the repair shop.

(b) The purpose of this section is to establish a set of specifications for tags based on experience and previous use. The tags are to be used in industry, mercantile establishments, or wherever such tags can be utilized to help prevent accidental injury to personnel or damage to property, or both.

(2) Definitions. The word "tag" as used in this section refers to a surface (usually card, paper, pasteboard, or some temporary or nonpermanent material) on which letters or markings, or both, appear. These letters or markings, or both, are for warning (cautioning) or safety instruction of employees who may be exposed to hazards. Tags are to be affixed to the device in question by string, wire, or adhesive.

(3) Do not start tags.

(a) The standard background color for do not start tags shall be red. (See Fig. J-10.)

(b) Letters shall be white or grey or etched, provided that a long lasting and sharp contrast results.

(c) Do not start tags shall be placed in a conspicuous location or shall be placed in such a manner that they effectively block the starting mechanism which would cause hazardous conditions should the equipment be energized.

(4) Danger tags.

(a) Danger tags should be used only where an immediate hazard exists. There should be no variation in the type of design of tags posted or hung to warn of specific dangers. (See Fig. J-11.)

(b) All employees should be instructed that danger tags indicate immediate danger and that special precautions are necessary.

(5) Caution tags.

(a) Caution tags should be used only to warn against potential hazards or to caution against unsafe practices. (See Fig. J-12.)

(b) All employees should be instructed that caution tags indicate a possible hazard against which proper precautions should be taken.

(6) Out of order tags. Out of order tags should be used only for the specific purpose of indicating that a piece of equipment, machinery, etc., is out of order and to attempt to use it might present a hazard. (See Fig. J-13.)

(7) Radiation tags.

(a) The standard background for radiation tags shall be yellow; the panel shall be reddish purple. Any letters used against the yellow background shall be black. The colors shall be those of opaque glossy samples as specified in Table 1, Fundamental Specification of Safety Colors for CIE Standard Source "C" American National Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1971.

(b) The method of dimension, design, and orientation of the standard symbol (one blade pointed downward and centered on the vertical axis) shall be executed as illustrated in Figure J-14. The symbol shall be prominently displayed and of a size consistent with the size of the equipment or area in which it is to be used.

(8) Biological hazard tags.

(a) The standard background color for the biological hazard symbol is optional as long as there is sufficient contrast for the symbol to be clearly defined. The symbol design (see Fig. J-15) shall be a fluorescent orange or orange-red color.

(b) The biological hazard tag shall be used to signify the actual or potential presence of a biohazard, to identify equipment, containers, rooms, materials, experimental animals, or combinations thereof, which contain or are contaminated with viable hazardous agents.

(c) For the purpose of this section the term "biological hazard" shall include only those infectious agents presenting a risk or potential risk to the well-being of man.

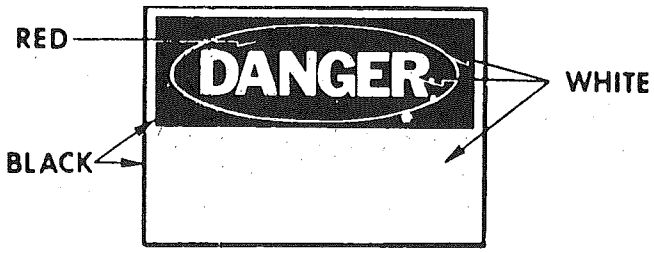


Fig. J-1
Danger Sign

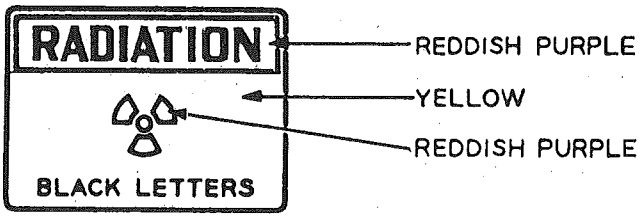


Fig. J-2
Radiation Warning Sign

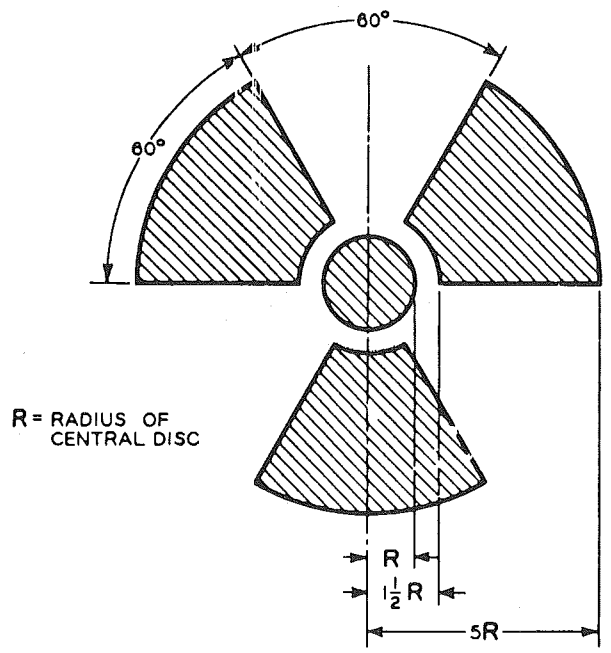


Fig. J-3
Standard Radiation Symbol

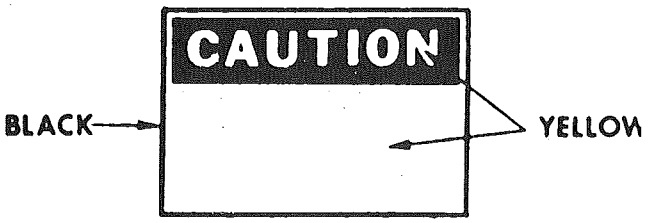


Fig. J-4
Caution Sign

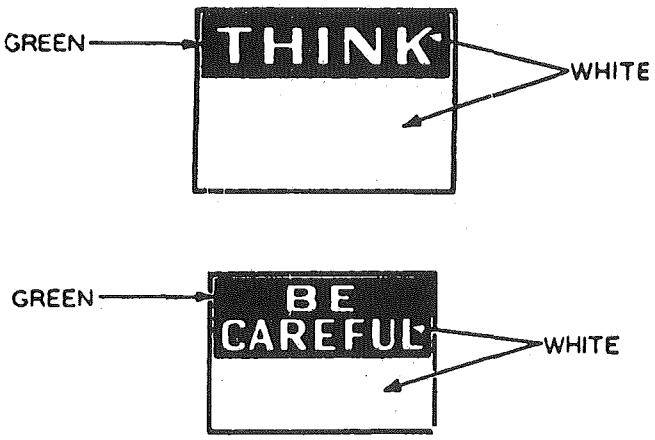


Fig. J–5

Safety Instruction Signs

(Note: The words "think" and "be careful," given here, are only illustrations. Other wordings may be used.)



Fig. J–6

Directional Signs

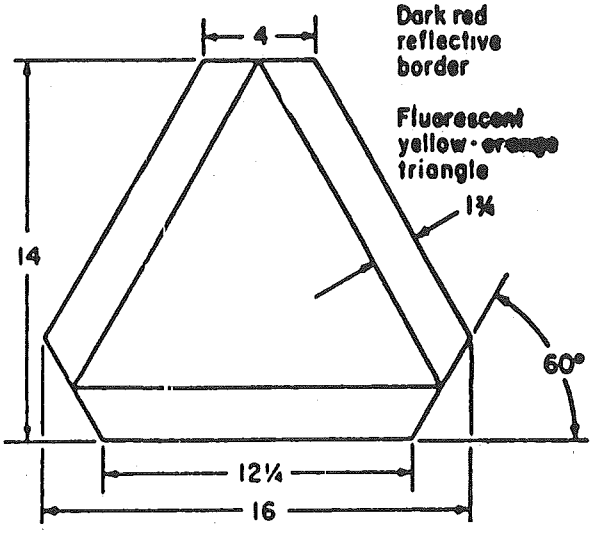


Fig. J–7

Slow–Moving Vehicle Emblem

Note: All dimensions are in inches.

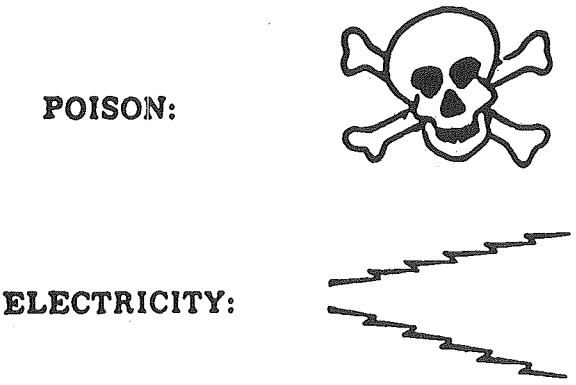
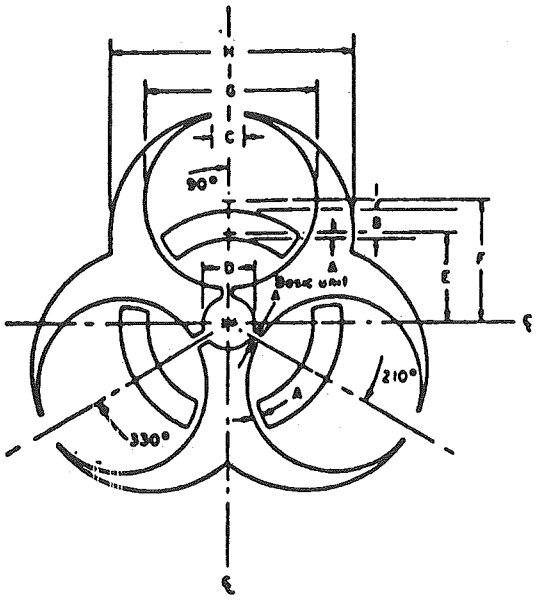


Fig. J–8

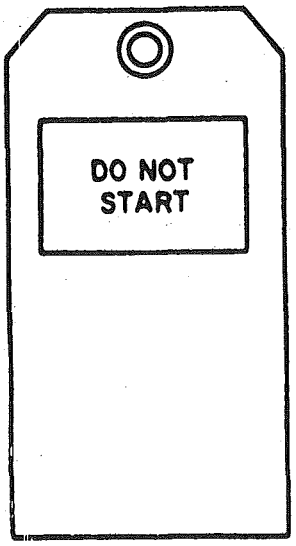
Symbols Used on Signs



Dimension	A	B	C	D	E	F	G	H
Units	1	3½	4	6	11	15	21	30

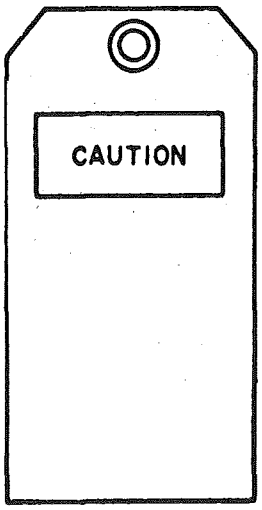
Fig. J–9

Symbol for Biological Hazard



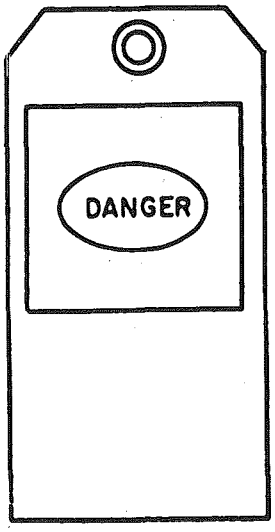
White tag
white letters on
red square

Fig. J-10
Do Not Start Tag



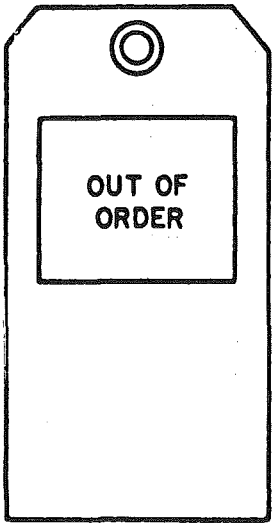
Yellow tag
yellow letters on a
black background

Fig. J-12
Caution Tag



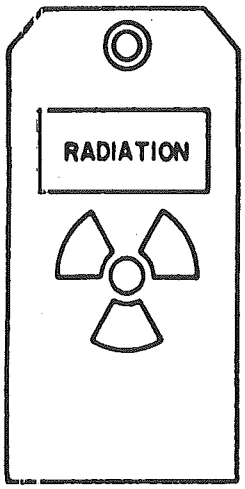
White tag
white letters on
red oval with a
black square

Fig. J-11
Danger Tag



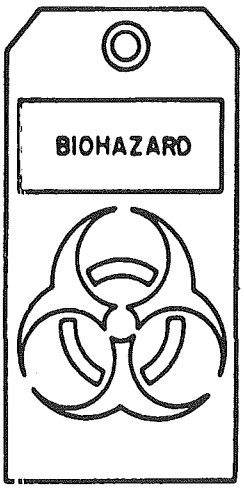
White tag
white letters on
black background

Fig. J-13
Out of Order Tag



Yellow tag
yellow letters in
reddish-purple panel
(Added wording in black
on yellow background)

Fig. J-14
Radiation Tag



White tag
black letters on
fluorescent-orange
background and
symbol

Fig. J-15
Biological Hazard Tag

TABLE J-1

STANDARD PROPORTIONS FOR DANGER SIGNS

Sign size, inches Height Width	Black rectangular panel, inches Height Width	Red oval, inches Height Width	Word danger, height inches	Maximum space available for sign wording, inches
		HORIZONTAL PATTERN		
7x10	3 1/4 x 9 3/8	2 7/8 x 8 1/2	1 7/16	2 3/4 x 9 3/8
10x14	4 5/8 x 13 3/8	4 1/8 x 11 7/8	2 1/16	4 1/4 x 13 3/8
14x20	6 1/2 x 19 3/8	5 3/4 x 17	2 7/8	6 1/4 x 19 3/8
20x28	9 1/4 x 27 3/8	8 1/4 x 23 7/8	4 1/8	9 1/2 x 27 3/8
		UPRIGHT PATTERN		
10x 7	2 3/8 x 6 3/8	2 1/8 x 5 7/8	1 1/16	6 3/8 x 6 3/8
14x10	3 1/4 x 9 3/8	2 7/8 x 8 1/2	1 7/16	9 1/2 x 9 3/8
20x14	4 5/8 x 13 3/8	4 1/8 x 11 7/8	2 1/16	14 x 13 3/8
28x20	6 1/2 x 19 3/8	5 3/4 x 17	2 7/8	20 1/4 x 19 3/8

TABLE J-2

STANDARD PROPORTIONS FOR CAUTION SIGNS

Sign size, inches height width	Black rectangular panel, inches height width	Word "Caution" height of letter, inches	Maximum space available for sign wording below panel inches height width
	HORIZONTAL PATTERN		
7 x 10	2 1/4 x 9 3/8	1 5/8	3 1/4 x 9 3/8
10 x 14	3 1/4 x 13 3/8	2 1/4	5 1/2 x 13 3/8
14 x 20	3 3/4 x 19 3/8	2 3/4	9 x 19 3/8
20 x 28	4 1/4 x 27 3/8	3 1/4	14 1/2 x 27 3/8
	UPRIGHT PATTERN		
10 x 7	1 5/8 x 6 3/8	1 1/8	7 x 6 3/8
14 x 10	2 1/4 x 9 3/8	1 5/8	10 1/2 x 9 3/8
20 x 14	3 1/4 x 13 3/8	2 1/4	15 1/2 x 13 3/8
28 x 20	3 3/4 x 19 3/8	2 3/4	24 x 19 3/8

TABLE J-3

STANDARD PROPORTIONS FOR SAFETY INSTRUCTION SIGNS

[TABLE J-3: PART 1——"Think" Safety Sign]

Sign size, inches, height, width	Green rectangular panel, inches, height, width	Word "Think" height letters, inches	Maximum Space available for sign wording below panel, inches height, width
7x10	2 3/4x 9 3/8	1 5/8	3 1/2x 9 3/8
10x14	3 1/4x13 3/8	2 1/4	5 1/2x13 3/8
14x20	3 3/4x19 3/8	2 3/4	9 x19 3/8
20x28	4 1/4x27 3/8	3 1/4	14 1/2x27 3/8

[TABLE J-3: PART 2——"Be Careful" Safety Sign]

Sign size, inches height, width	Green panel, inches, height, width	Maximum Word "Be" height of letters, inches	Word "Careful" height of letters, inches	Space available for sign wording below panel, inches, height, width
7x10	3 3/8x 9 3/8	1 1/4	1 3/16	2 1/2x 9 3/8
10x14	4 1/4x13 3/8	1 3/4	2 3/16	4 x13 3/8
14x20	6 1/4x19 3/8	2 1/2	3 1/8	6 x19 3/8
20x28	9 1/2x27 3/8	3 1/2	4 3/8	9 1/4x27 3/8

TABLE J-4

STANDARD PROPORTIONS FOR DIRECTIONAL SIGNS

Sign size inches height	Black rectangular panel, inches height width	White arrow, inches: Overall length	Arrow head height width	Arrow shaft height	Arrow tail height width	Maximum space for sign wording below panel height
6 1/2x14	3 1/4x 13 3/8	12 5/8	2 3/4x 3	1 1/8	2 3/8x 3 1/4	2 1/4x 13 3/8
9x20	4 1/2x 19 3/8	18 5/8	3 3/4x 4 1/8	1 5/8	3 1/4x 4 1/2	3 3/8x 19 3/8
12x28	6x 27 3/8	26 5/8	5 1/8x 5 5/8	2 1/8	4 3/8x 6	4 3/4x 27 3/8
15x36	7 1/2x 35 3/8	34 5/8	6 3/8x 6 7/8	2 5/8	5 1/2x 7 1/2	6 1/4x 35 3/8

[Order 76-6, § 296-24-14011, filed 3/1/76; Order 73-5, § 296-24-14011, filed 5/9/73 and Order 73-4, § 296-24-14011, filed 5/7/73.]

WAC 296-24-145 Window washing.

[Order 73-5, § 296-24-145, filed 5/9/73 and Order 73-4, § 296-24-145, filed 5/7/73.]

WAC 296-24-14501 Definitions. (1) "Building" means a building more than one story in height or having window sills more than twelve feet above grade, which is a place of employment.

(2) The term "outside" means wholly without the building and/or establishment.

(3) The term "window cleaning" means all methods of cleaning windows.

(4) The term "safety belt" means the equipment which is attached to the body of the window cleaner while cleaning windows.

(5) "Waist band" means that part of the safety belt which is attached to the body of the window cleaner.

(6) "Terminal strap" means the strap or rope which is attached to the waist band and to which the belt terminals are attached.

(7) A "safe manner" means the method employed in cleaning windows in which the employee is protected:

(a) By standing or sitting on the sill while protected by a safety device.

(b) By working from a ladder.

(c) By working from a scaffold, or

(d) By working from a boatswain's chair.

(8) "Belt terminal" means that part of the safety belt which is fastened to the terminal strap to be attached to the anchor during the operation of window cleaning.

(9) The term "anchor" means the fitting, fastened to the window frame or wall, to which the belt terminal is attached.

(10) The term "single-head anchor" means an anchor having one head.

(11) The term "double-head anchor" means an anchor having two heads.

(12) The term "machine bolt" means the bolts used to install anchors in steel window frames.

(13) "Grade" means the ground, the floor, the sidewalk, the roof, or any approximately level solid surface of sufficient area and having sufficient structural strength to be considered as a safe place to work.

[Order 73-5, § 296-24-14501, filed 5/9/73 and Order 73-4, § 296-24-14501, filed 5/7/73.]

WAC 296-24-14503 Application. These orders shall apply to all window cleaning done in places of employment.

[Order 73-5, § 296-24-14503, filed 5/9/73 and Order 73-4, § 296-24-14503, filed 5/7/73.]

WAC 296-24-14505 Protection of persons engaged at window cleaning. (1) The employer shall not require nor permit any window in such building to be cleaned from the outside unless means are provided to enable such work to be done in a safe manner as provided in these standards.

(2) All employees required to clean windows shall use safety devices as required herein.

[Order 73-5, § 296-24-14505, filed 5/9/73 and Order 73-4, § 296-24-14505, filed 5/7/73.]

WAC 296-24-14507 General. (1) In every building hereafter erected, having windows so constructed that it is usual and/or practicable for a person to stand on the sill in order to clean said window, there shall be installed window cleaner's safety anchors approved by the American Standard Association.

(2) When an employee is sitting on the window sill with his legs inside the room, he shall wear a safety belt equipped with a safety line. One end of the line shall be tied to a radiator, or any other substantial anchorage inside the room, unless the window opening is equipped with anchors in which case he shall attach his safety belt to said anchors.

(3) No safety device shall be used in window cleaning operations until it has the approval of the American Standard Association.

(4) The use of lag screws is prohibited in new or replacement installations hereafter made.

(5) Window cleaners shall not pass from one window sill to another window sill on the outside of a building unless one terminal is connected at all times.

(6) No employee who has not been properly trained to handle such equipment shall be assigned to work on scaffolds or boatswains' chairs.

(7) All window cleaning safety devices hereafter approved shall bear identification marks to identify the approval of the American Standard Association.

[Order 73-5, § 296-24-14507, filed 5/9/73 and Order 73-4, § 296-24-14507, filed 5/7/73.]

WAC 296-24-14509 Belt terminals, anchors and bolts. (1) All anchors and belt terminals shall be capable of withstanding the following tests:

(a) To withstand an impact test of an iron weight of thirty-two pounds falling free a distance of four feet and striking the head of the anchor without fracture.

(b) A drop test of three hundred fifty pounds dead weight (not sand) falling a distance of four feet without fracture. The connection between the weight and anchor being a standard safety belt or ropes or cables not over six feet long.

(c) To withstand a tension pull of six thousand pounds without fracture. This tension to be applied through a belt terminal and in the direction which the anchor must withstand in service when a man falls.

(2) All metals used in the manufacture of anchors and belt terminals shall have a minimum ultimate tensile strength of fifty-five thousand pounds per square inch, with an elongation of at least twenty-five percent in two inches and shall have a corrosion resistance of sixty percent as compared to copper. The belt terminal may be excepted from the corrosive resistance and elongation requirements of this order if of material and design of obvious superiority.

(3) All anchors installed hereafter shall be double-headed. These heads to be so designed or spaced that it will be impossible to attach the belt terminal to a single head. The division of safety may approve a single-headed anchor upon sufficient tests and proofs.

[Order 73-5, § 296-24-14509, filed 5/9/73 and Order 73-4, § 296-24-14509 filed 5/7/73.]

WAC 296-24-14511 Belts. (1) An approved safety belt of tanned leather, canvas or any other approved material shall be used when the operator is required to stand on the sill while cleaning the window. The safety belt shall be capable of withstanding a drop test of three hundred fifty pounds dead weight (not sand) falling a distance of four feet without failure, one terminal only being attached. The connection between the weight and the belt shall be the waist band of the belt.

(2) The safety belt shall be kept in repair.

(3) Window cleaners using a safety belt shall attach one belt terminal to anchor before stepping out onto the sill. During the operation of window cleaning, both belt terminals shall be attached to the anchors.

(4) The fittings on the waist band through which the terminal strap or rope passes shall be so constructed that it will be impossible for the safety terminals to pass through them.

(5) Metal thimbles shall be provided where ropes or straps are secured to eyes or rings.

(6) Suitable length terminal straps shall be provided for windows more than six feet wide between mullions.

[Order 73-5, § 296-24-14511, filed 5/9/73 and Order 73-4, § 296-24-14511, filed 5/7/73.]

WAC 296-24-14513 Anchor installations. (1) Locations: Anchors shall be attached to the side frames of the window or to the building at a point not less than forty-two inches nor more than fifty-one inches (approximately) above the window sill. Care shall be taken when screwing up anchor fastenings, to prevent producing excess stresses.

(2) Wood—Existing and new buildings: When anchors are attached to wood construction, through bolts of not less than one-half inch diameter, extending at least through the window frame with washers and nuts inside, shall be used as anchor fasteners. Means shall be provided to keep the nut from backing off.

Wall flanges shall be not less than one and one-quarter inches in diameter, or equivalent area.

(3) Concrete—New buildings: Anchors attached to concrete poured in place in buildings hereafter erected, shall be installed while the concrete is being placed. Such anchors shall extend not less than five inches into the concrete and shall have a cross-sectional area of not less than one-quarter of a square inch and shall be provided with a fluke at the end of the anchor not less than one inch in length.

(4) Masonry—New buildings: Anchors attached to masonry, other than concrete poured in place, in buildings hereafter erected, shall be installed while the wall is under construction and shall be shaped to build into the joints between masonry units. Such anchors shall be not less than eight and one-half inches long and shall have a cross-sectional area of not less than one-quarter of a square inch at all unexposed points and shall have a fluke or flukes having a holding surface of not less than one inch in length that shall be firmly imbedded in the masonry.

(5) Masonry and concrete—Existing buildings: Anchors installed on buildings or masonry and concrete construction heretofore erected, shall be attached to the window frames as required in these standards, or by other methods approved by the division of safety.

(6) Hollow metal—Existing and new buildings: Anchors shall be attached to hollow metal construction by one of the following methods:

(a) At least two nickel steel bolts not less than five-sixteenths of an inch in diameter passing through the frame and a steel reinforcing plate five-sixteenths of an inch thick and not less than six inches long, placed on the inside of the frame and secured by means of nuts and lock washers. In cases where it is impracticable to provide nuts and lock washers, the reinforcing plate may be tapped to receive five-sixteenths inch diameter bolts, and the bolts shall extend through the plate.

(b) Where the screw bolt is an integral part of the anchor, it shall be at least one-half inch in diameter and shall be secured by means of a nut and lock washer, or any other method approved by the division of safety.

(c) All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off or becoming loose.

(7) Solid metal—Existing and new buildings: Anchors shall be attached to solid metal construction by one of the following methods:

(a) At least two nickel steel bolts not less than five–sixteenths of an inch in diameter passing through the frame, and secured by means of nuts and lock washers. In cases where it is impracticable to provide nuts and lock washers, the metal frame shall be reinforced with a five–sixteenths inch thick plate and tapped to receive at least two five–sixteenths inch diameter nickel steel bolts, and the bolts shall extend through the reinforcing plate.

(b) Where the screw bolt is an integral part of the anchor, it shall be at least one–half inch in diameter and shall be secured by means of a nut and lock washer, or any other method approved by the division of safety.

(c) All anchors and anchor fastenings shall be provided with means to prevent them from turning, backing off or becoming loose.

[Order 73–5, § 296–24–14513, filed 5/9/73 and Order 73–4, § 296–24–14513, filed 5/7/73.]

WAC 296-24-14515 Reversible and pivot windows. (1) When it is necessary to clean reversible and pivot windows either of which is prevented from properly operating by obstructions or by the design of said windows, they shall be provided with safety devices of approved design.

(2) Horizontally pivoted sash. Provision shall be made so that the outside of horizontally pivoted windows may be cleaned without necessitating the window washer leaning against or putting his weight on the sash.

[Order 73–5, § 296–24–14515, filed 5/9/73 and Order 73–4, § 296–24–14515, filed 5/7/73.]

WAC 296-24-14517 Ladders. (1) All movable ladders shall be provided with rough surface feet or other suitable means to prevent slipping.

(2) A person shall be placed at the foot of all ladders over eighteen feet in length.

(3) No person shall be required to stand within four rungs of the top of any ladder.

(4) No ladder shall be used where the base of the ladder is above grade except where it is securely fastened so as to prevent it from slipping or falling.

[Order 73–5, § 296–24–14517, filed 5/9/73 and Order 73–4, § 296–24–14517, filed 5/7/73.]

WAC 296-24-14519 Boatswain's chairs. An employee shall be secured in his boatswain's chair with a safety belt or rope, and shall have a short rope with a sliding hitch between his body or the chair and the hoistline.

[Order 73–5, § 296–24–14519, filed 5/9/73 and Order 73–4, § 296–24–14519, filed 5/7/73.]

Part C

MACHINERY AND MACHINE GUARDING

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-170 Cooperage machinery. [Order 73-5, § 296-24-170, filed 5/9/73 and Order 73-4, § 296-24-170, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17001 Definitions. [Order 73-5, § 296-24-17001, filed 5/9/73 and Order 73-4, § 296-24-17001, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17003 Heading bolt sawing machine. [Order 73-5, § 296-24-17003, filed 5/9/73 and Order 73-4, § 296-24-17003, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17005 Bolt, equalizer, stave, and heading saws (tilting table style). [Order 73-5, § 296-24-17005, filed 5/9/73 and Order 73-4, § 296-24-17005, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17007 Barrel stave saws (cylindrical saws). [Order 73-5, § 296-24-17007, filed 5/9/73 and Order 73-4, § 296-24-17007, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17009 Hand-fed ripsaws. [Order 73-5, § 296-24-17009, filed 5/9/73 and Order 73-4, § 296-24-17009, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17011 Self-feed stave and heading equalizer saws. [Order 73-5, § 296-24-17011, filed 5/9/73 and Order 73-4, § 296-24-17011, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17013 Stave and heading planers (single and double heads). [Order 73-5, § 296-24-17013, filed 5/9/73 and Order 73-4, § 296-24-17013, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17015 Stave jointing machines (wheel). [Order 73-5, § 296-24-17015, filed 5/9/73 and Order 73-4, § 296-24-17015, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17017 Heading jointer and doweler machine (wheel). [Order 73-5, § 296-24-17017, filed 5/9/73 and Order 73-4, § 296-24-17017, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17019 Heading rounder. [Order 73-5, § 296-24-17019, filed 5/9/73 and Order 73-4, § 296-24-17019, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17021 Power windlass machine. [Order 73-5, § 296-24-17021, filed 5/9/73 and Order 73-4, § 296-24-17021, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17023 Crozing machine (stationary heads). [Order 73-5, § 296-24-17023, filed 5/9/73 and Order 73-4, § 296-24-17023, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17025 Heading-up machine. [Order 73-5, § 296-24-17025, filed 5/9/73 and Order 73-4, § 296-24-17025, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17027 Head charring machine. [Order 73-5, § 296-24-17027, filed 5/9/73 and Order 73-4, § 296-24-17027, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17029 Bilge truss hoop ring removing machine. [Order 73-5, § 296-24-17029, filed 5/9/73 and Order 73-4, § 296-24-17029, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17031 Hoop elevators and conveyors. [Order 73-5, § 296-24-17031, filed 5/9/73 and Order 73-4, § 296-24-17031, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17033 Barrel sanding machine. [Order 73-5, § 296-24-17033, filed 5/9/73 and Order 73-4, § 296-24-17033, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17035 Hoop drivers and trussers. [Order 73-5, § 296-24-17035, filed 5/9/73 and Order 73-4, § 296-24-17035, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17037 Head sanding machine. [Order 73-5, § 296-24-17037, filed 5/9/73 and Order 73-4, § 296-24-17037, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17039 Hand jointer. [Order 73-5, § 296-24-17039, filed 5/9/73 and Order 73-4, § 296-24-17039, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17041 Hoop punching and coiling machine. [Order 73-5, § 296-24-17041, filed 5/9/73 and Order 73-4, § 296-24-17041, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17043 Hoop riveting machine. [Order 73-5, § 296-24-17043, filed 5/9/73 and Order 73-4, § 296-24-17043, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17045 Hoop flaring and expanding machine. [Order 73-5, § 296-24-17045, filed 5/9/73 and Order 73-4, § 296-24-17045, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-17047 Inspection and maintenance of cooperage machinery. [Order 73-5, § 296-24-17047, filed 5/9/73 and Order 73-4, § 296-24-17047, filed 5/7/73.] Repealed by 82-13-045 (Order 82-22), filed 6/11/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-150 Machinery and machine guarding—General requirements for all machines—Scope and application. All sections of this chapter which include

WAC 296-24-150 in the section number apply to machinery and machine guarding.

[Order 74-27, § 296-24-150, filed 5/7/74; Order 73-5, § 296-24-150, filed 5/9/73 and Order 73-4, § 296-24-150, filed 5/7/73.]

WAC 296-24-15001 Machine guarding. (1) Types of guarding. One or more methods of machine guarding shall be provided to protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks. Examples of guarding methods are—barrier guards, two-hand tripping devices, electronic safety devices, etc.

(2) General requirements for machine guards. Guards shall be affixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard shall be such that it does not offer an accident hazard in itself.

(3) Point of operation guarding.

(a) Point of operation is the area on a machine where work is actually performed upon the material being processed.

(b) The point of operation of machines whose operation exposes an employee to injury, shall be guarded. The guarding device shall be in conformity with any appropriate standards therefor, or, in the absence of applicable specific standards, shall be so designed and constructed as to prevent the operator from having any part of his body in the danger zone during the operating cycle.

(c) Special handtools for placing and removing material shall be such as to permit easy handling of material without the operator placing a hand in the danger zone. Such tools shall not be in lieu of other guarding required by this section, but can only be used to supplement protection provided.

(d) The following are some of the machines which usually require point of operation guarding.

(i) Guillotine cutters.
(ii) Shears.
(iii) Alligator shears.
(iv) Power presses.
(v) Milling machines.
(vi) Power saws.
(vii) Jointers.
(viii) Portable power tools.
(ix) Forming rolls and calenders.

(4) Barrels, containers, and drums. Revolving drums, barrels, and containers shall be guarded by an enclosure which is interlocked with the drive mechanism, so that the barrel, drum, or container cannot revolve unless the guard enclosure is in place.

(5) Exposure of blades. When the periphery of the blades of a fan is less than seven feet above the floor or working level, the blades shall be guarded. The guard shall have openings no larger than one-half inch. Safeguards shall be so constructed that rods, pipes, or like material being handled by workmen will not enter same, and come in contact with moving machinery.

(6) Cams and other machine parts which move in such a manner as to create shearing or crushing hazards shall, if exposed to contact, be guarded with a standard safeguard.

[Order 74-27, § 296-24-15001, filed 5/7/74; Order 73-5, § 296-24-15001, filed 5/9/73 and Order 73-4, § 296-24-15001, filed 5/7/73.]

WAC 296-24-15003 Anchoring fixed machinery. Machines designed for a fixed location shall be securely anchored to prevent walking or moving.

[Order 73-5, § 296-24-15003, filed 5/9/73 and Order 73-4, § 296-24-15003, filed 5/7/73.]

WAC 296-24-15005 Means to prevent slipping. Operators of dangerous machinery, such as shapers, jointers, and circular saws, shall be safeguarded against slipping on smooth, oily or otherwise slippery floor, where he stands while at the point of operation of such dangerous machinery, by covering such portion of the floor with a rubber mat, cork, nonslip composition flooring, or some other effective means of preventing slipping.

[Order 73-5, § 296-24-15005, filed 5/9/73 and Order 73-4, § 296-24-15005, filed 5/7/73.]

WAC 296-24-15007 Machines shall be stopped when making repairs. All power-driven machinery shall be stopped and brought to a complete standstill before any repairs or adjustments are made or pieces of material or refuse removed, except where motion is necessary to make adjustment.

[Order 74-27, § 296-24-15007, filed 5/7/74.]

WAC 296-24-15009 Counterweights. All counterweights exposed to contact shall be guarded with standard safeguards.

[Order 74-27, § 296-24-15009, filed 5/7/74.]

WAC 296-24-165 Fixed and portable power tool requirements. Scope and application. All sections which include WAC 296-24-165 in the section number shall apply to the use of fixed and portable power tools for processing all materials, including, but not limited to, wood, metal, plastics, and other natural and synthetic material.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-165, filed 7/13/83, effective 9/12/83; Order 76-6, § 296-24-165, filed 3/1/76; Order 73-5, § 296-24-165, filed 5/9/73 and Order 73-4, § 296-24-165, filed 5/7/73.]

WAC 296-24-16501 Definitions. (1) "Point of operations" means that point at which cutting, shaping, boring, or forming is accomplished upon the stock.

(2) "Push stick" means a narrow strip of wood or other soft material with a notch cut into one end and which is used to push short pieces of material through saws.

(3) "Block" means a short block of wood, provided with a handle similar to that of a plane and a shoulder at the rear end, which is used for pushing short stock over revolving cutters.

[Order 73-5, § 296-24-16501, filed 5/9/73 and Order 73-4, § 296-24-16501, filed 5/7/73.]

WAC 296-24-16503 Machine construction general. (1) Each machine shall be so constructed as to be free from sensible vibration when the largest size tool is mounted and run idle at full speed.

(2) Arbors and mandrels shall be constructed so as to have firm and secure bearing and be free from play.

(3) Any automatic cutoff saw that strokes continuously without the operator being able to control each stroke shall not be used.

(4) Saw frames or tables shall be constructed with lugs cast on the frame or with an equivalent means to limit the size of the saw blade that can be mounted, so as to avoid overspeed caused by mounting a saw larger than intended.

(5) Circular saw fences shall be so constructed that they can be firmly secured to the table or table assembly without changing their alignment with the saw. For saws with tilting tables or tilting arbors the fence shall be so constructed that it will remain in a line parallel with the saw, regardless of the angle of the saw with the table.

(6) Circular saw gages shall be so constructed as to slide in grooves or tracks that are accurately machined, to insure exact alignment with the saw for all positions of the guide.

(7) Hinged saw tables shall be so constructed that the table can be firmly secured in any position and in true alignment with the saw.

(8) All belts, pulleys, gears, shafts, and moving parts shall be guarded in accordance with the specific requirements of WAC 296-24-20501 through 296-24-20533.

(9) It is recommended that each power-driven machine be provided with a disconnect switch that can be locked in the off position.

(10) The frames and all exposed, noncurrent-carrying metal parts of portable electric machinery operated at more than 90 volts to ground shall be grounded and other portable motors driving electric tools which are held in the hand while being operated shall be grounded if they operate at more than 90 volts to ground. The ground shall be provided through use of a separate ground wire and polarized plug and receptacle.

(11) For all circular saws where conditions are such that there is a possibility of contact with the portion of the saw either beneath or behind the table, that portion of the saw shall be covered with an exhaust hood, or, if no exhaust system is required, with a guard that shall be so arranged as to prevent accidental contact with the saw.

(12) Revolving double arbor saws shall be fully guarded in accordance with all the requirements for circular crosscut saws or with all the requirements for circular ripsaws, according to the kind of saws mounted on the arbors.

(13) No saw, cutter head, or tool collar shall be placed or mounted on a machine arbor unless the tool has been accurately machined to size and shape to fit the arbor.

(14) Combs (featherboards) or suitable jigs shall be provided at the workplace for use when a standard guard cannot be used, as in dadoing, grooving, jointing, moulding and rabbeting.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16503, filed 7/13/83, effective 9/12/83; 82-13-045 (Order 82-22), § 296-24-16503, filed 6/11/82; Order 73-5, § 296-24-16503, filed 5/9/73 and Order 73-4, § 296-24-16503, filed 5/7/73.]

WAC 296-24-16505 Machine controls and equipment. (1) A mechanical or electrical power control shall be provided on each machine to make it possible for the operator to cut off the power from each machine without leaving his position at the point of operation.

(2) On machines driven by belts and shafting, a locking-type belt shifter or an equivalent positive device shall be used.

(3) On applications where injury to the operator might result if motors were to restart after power failures, provision shall be made to prevent machines from automatically restarting upon restoration of power.

(4) Power controls and operating controls should be located within easy reach of the operator while he is at his regular work location, making it unnecessary for him to reach over the cutter to make adjustments. This does not apply to constant pressure controls used only for setup purposes.

(5) On each machine operated by electric motors, positive means shall be provided for rendering such controls or devices inoperative while repairs or adjustments are being made to the machines they control.

(6) Each operating treadle shall be protected against unexpected or accidental tripping.

(7) Feeder attachments shall have the feed rolls or other moving parts so covered or guarded as to protect the operator from hazardous points.

[Order 73-5, § 296-24-16505, filed 5/9/73 and Order 73-4, § 296-24-16505, filed 5/7/73.]

WAC 296-24-16507 Hand-fed ripsaws. (1) Each circular hand-fed ripsaw shall be guarded by a hood which shall completely enclose that portion of the saw above the table and that portion of the saw above the material being cut. The hood and mounting shall be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut but it shall not offer any considerable resistance to insertion of material to saw or to passage of the material being sawed. The hood shall be made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and shall be so designed as to protect the operator from flying splinters and broken saw teeth. It shall be made of material that is soft enough so that it will be unlikely to cause tooth breakage. The material should not shatter when broken, should be nonexplosive, and should be no more flammable than wood. The hood shall be so mounted as to insure that its operation will be positive, reliable, and in true alignment with the saw; and the mounting shall be adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.

(2) Each hand-fed circular ripsaw shall be furnished with a spreader to prevent material from squeezing the saw or being thrown back on the operator. The spreader

shall be made of hard tempered steel, or its equivalent, and shall be thinner than the saw kerf. It shall be of sufficient width to provide adequate stiffness or rigidity to resist any reasonable side thrust or blow tending to bend or throw it out of position. The spreader shall be attached so that it will remain in true alignment with the saw even when either the saw or table is tilted, and should be placed so that there is not more than 1/2-inch space between the spreader and the back of the saw when the largest saw is mounted in the machine. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required. On the completion of such operations; the spreader shall be immediately replaced.

(3) Each hand-fed circular ripsaw shall be provided with nonkickback fingers or dogs so located as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator. They shall be designed to provide adequate holding power for all the thicknesses of materials being cut.

[Order 73-5, § 296-24-16507, filed 5/9/73 and Order 73-4, § 296-24-16507, filed 5/7/73.]

WAC 296-24-16509 Hand-fed crosscut table saws. (1) Each circular crosscut table saw shall be guarded by a hood which shall meet all the requirements of WAC 296-24-16507(1) for hoods for circular ripsaws.

(2) Each circular crosscut saw should also be provided with a spreader which should meet all the requirements of WAC 296-24-16507.

[Order 73-5, § 296-24-16509, filed 5/9/73 and Order 73-4, § 296-24-16509, filed 5/7/73.]

WAC 296-24-16511 Circular resaws. (1) Each circular resaw shall be guarded by a hood or shield of metal above the saw. This hood or shield shall be so designed as to guard against danger from flying splinters or broken saw teeth.

(2) Each circular resaw (other than self-feed saws with a roller or wheel at back of the saw) shall be provided with a spreader fastened securely behind the saw. The spreader shall be slightly thinner than the saw kerf and slightly thicker than the saw disk.

[Order 73-5, § 296-24-16511, filed 5/9/73 and Order 73-4, § 296-24-16511, filed 5/7/73.]

WAC 296-24-16513 Self-feed circular saws. (1) Feed rolls and saws shall be protected by a hood or guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and the bottom of the guard shall come down to within three-eighths inch of the plane formed by the bottom or working surfaces of the feed rolls. This distance (three-eighths inch) may be increased to three-fourths inch, provided the lead edge of the hood is extended to be not less than five and one-half inches in front of the nip point between the front roll and the work.

(2) Each self-feed circular ripsaw shall be provided with sectional nonkickback fingers for the full width of the feed rolls. They shall be located in front of the saw and so arranged as to be in continual contact with the material being fed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16513, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16513, filed 5/9/73 and Order 73-4, § 296-24-16513, filed 5/7/73.]

WAC 296-24-16515 Swing cutoff saws. The requirements of this section are also applicable to sliding cutoff saws mounted above the table.

(1) Each swing cutoff saw shall be provided with a hood that will completely enclose the upper half of the saw, the arbor end, and the point of operation at all positions of the saw. The hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters and broken saw teeth. Its hood shall be so designed that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table the hood will rise on top of the fence, and when the saw is moved forward the hood will drop on top of and remain in contact with the table or material being cut.

(2) Each swing cutoff saw shall be provided with an effective device to return the saw automatically to the back of the table when released at any point of its travel. Such a device shall not depend for its proper functioning upon any rope, cord, or spring. If there is a counterweight, the bolts supporting the bar and counterweight shall be provided with cotter pins; and the counterweight shall be prevented from dropping by either a bolt passing through both the bar and counterweight, or a bolt put through the extreme end of the bar, or, where the counterweight does not encircle the bar, a safety chain attached to it.

(3) Limit chains or other equally effective devices shall be provided to prevent the saw from swinging beyond the front or back edges of the table, or beyond a forward position where the gullets of the lowest saw teeth will rise above the table top.

(4) Inverted swing cutoff saws shall be provided with a hood that will cover the part of the saw that protrudes above the top of the table or above the material being cut. It shall automatically adjust itself to the thickness of and remain in contact with the material being cut.

[Order 73-5, § 296-24-16515, filed 5/9/73 and Order 73-4, § 296-24-16515, filed 5/7/73.]

WAC 296-24-16517 Radial saws. (1) The upper hood shall completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The upper hood shall be constructed in such a manner and of such material that it will protect the operator from flying splinters, broken saw teeth, etc., and will deflect sawdust away from the operator. The sides of the lower exposed portion of the blade shall be guarded to the full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut to give maximum protection possible for the operation being performed.

(2) Each radial saw used for ripping shall be provided with nonkickback fingers or dogs located on both sides of the saw so as to oppose the thrust or tendency of the saw to pick up the material or to throw it back toward the operator. They shall be designed to provide adequate holding power for all the thickness of material being cut.

(3) An adjustable stop shall be provided to prevent the forward travel of the blade beyond the position necessary to complete the cut in repetitive operations.

(4) Installation shall be in such a manner that the front end of the unit will be slightly higher than the rear, so as to cause the cutting head to return gently to the starting position when released by the operator.

(5) Ripping and ploughing shall be against the direction in which the saw turns. The direction of the saw rotation shall be conspicuously marked on the hood. In addition, a permanent label not less than 1 1/2 inches by 3/4 inch shall be affixed to the rear of the guard at approximately the level of the arbor, reading as follows: "Danger: Do not rip or plough from this end." Such a label should be colored standard danger red.

[Order 73-5, § 296-24-16517, filed 5/9/73 and Order 73-4, § 296-24-16517, filed 5/7/73.]

WAC 296-24-16519 Bandsaws and band resaws. (1) All portions of the saw blade shall be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table. Bandsaw wheels shall be fully encased. The outside periphery of the enclosure shall be solid. The front and back of the band wheels shall be either enclosed by solid material or by wire mesh or perforated metal. Such mesh or perforated metal shall be not less than 0.037 inch (U.S. Gage No. 20), and the openings shall be not greater than three-eighths inch. Solid material used for this purpose shall be of an equivalent strength and firmness. The guard for the portion of the blade between the sliding guide and the upper-saw-wheel guard shall protect the saw blade at the front and outer side. This portion of the guard shall be self-adjusting to raise and lower with the guide. The upper-wheel guard shall be made to conform to the travel of the saw on the wheel, and the top member of the guard should have at least a 2-inch clearance outside the saw and be lined with smooth material, preferably metal. Effective brakes should be provided to stop the wheel in case of blade breakage.

(2) Each bandsaw machine shall be provided with a tension control device to indicate a proper tension for the standard saws used on the machine, in order to assist in the elimination of saw breakage due to improper tension.

(3) Feed rolls of band resaws shall be protected with a suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and the edge of the guard shall come to within three-eighths inch of the plane formed by the inside face of the feed roll in contact with the stock being cut.

[Order 73-5, § 296-24-16519, filed 5/9/73 and Order 73-4, § 296-24-16519, filed 5/7/73.]

WAC 296-24-16521 Jointers. (1) Each hand-fed planer and jointer with horizontal head shall be equipped with a cylindrical cutting head, the knife projection of which shall not exceed one-eighth inch beyond the cylindrical body of the head.

(2) The opening in the table shall be kept as small as possible. The clearance between the edge of the rear table and the cutter head shall be not more than one-eighth inch. The table throat opening shall be not more than two and one-half inches when tables are set or aligned with each other for zero cut.

(3) Each hand-fed jointer with a horizontal cutting head shall have an automatic guard which will cover all the section of the head on the working side of the fence or gage. The guard shall effectively keep the operator's hand from coming in contact with the revolving knives. The guard shall automatically adjust itself to cover the unused portion of the head and shall remain in contact with the material at all times.

(4) Each hand-fed jointer with horizontal cutting head shall have a guard which will cover the section of the head back of the gage or fence.

(5) Each jointer with vertical head shall have either an exhaust hood or other guard so arranged as to enclose completely the revolving head, except for a slot of such width as may be necessary and convenient for the application of the material to be jointed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16521, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16521, filed 5/9/73 and Order 73-4, § 296-24-16521, filed 5/7/73.]

WAC 296-24-16523 Tenoning machines. (1) Feed chains and sprockets of all double end tenoning machines shall be completely enclosed, except for that portion of chain used for conveying the stock.

(2) At the rear ends of frames over which feed conveyors run, sprockets and chains shall be guarded at the sides by plates projecting beyond the periphery of sprockets and the ends of lugs.

(3) Each tenoning machine shall have all cutting heads, and saws if used, covered by metal guards. These guards shall cover at least the unused part of the periphery of the cutting head. If such a guard is constructed of sheet metal, the material used shall be not less than one-sixteenth inch in thickness, and if cast iron is used, it shall be not less than three-sixteenths inch in thickness.

(4) Where an exhaust system is used, the guard shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in subdivision (3) of this subsection.

[Order 76-6, § 296-24-16523, filed 3/1/76; Order 73-5, § 296-24-16523, filed 5/9/73 and Order 73-4, § 296-24-16523, filed 5/7/73.]

WAC 296-24-16525 Boring and mortising machines. (1) Safety-bit chucks with no projecting set screws shall be used.

(2) Boring bits should be provided with a guard that will enclose all portions of the bit and chuck above the material being worked.

(3) The top of the cutting chain and driving mechanism shall be enclosed.

(4) If there is a counterweight, one of the following or equivalent means shall be used to prevent its dropping:

(a) It shall be bolted to the bar by means of a bolt passing through both bar and counterweight;

(b) A bolt shall be put through the extreme end of the bar;

(c) Where the counterweight does not encircle the bar, a safety chain shall be attached to it;

(d) Other types of counterweights shall be suspended by chain or wire rope and shall travel in a pipe or other suitable enclosure wherever they might fall and cause injury.

(5) Universal joints on spindles of boring machines shall be completely enclosed in such a way as to prevent accidental contact by the operator.

(6) Each operating treadle shall be covered by an inverted U-shaped metal guard, fastened to the floor, and of adequate size to prevent accidental tripping.

[Order 73-5, § 296-24-16525, filed 5/9/73 and Order 73-4, § 296-24-16525, filed 5/7/73.]

WAC 296-24-16527 Shapers and similar equipment. (1) The cutting heads of each shaper, hand-fed panel raiser, or other similar machine not automatically fed, shall be enclosed with a cage or adjustable guard so designed as to keep the operator's hand away from the cutting edge. The diameter of circular shaper guards shall be not less than the greatest diameter of the cutter. In no case shall a warning device of leather or other material attached to the spindle be acceptable.

(2) All double-spindle shapers shall be provided with a spindle starting and stopping device for each spindle.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16527, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16527, filed 5/9/73 and Order 73-4, § 296-24-16527, filed 5/7/73.]

WAC 296-24-16529 Planing, molding, sticking, and matching machines. (1) Each planing, molding, sticking, and matching machine shall have all cutting heads, and saws if used, covered by a metal guard. If such guard is constructed of sheet metal, the material used shall be not less than 1/16 inch in thickness, and if cast iron is used, it shall be not less than three-sixteenths inch in thickness.

(2) Where an exhaust system is used, the guards shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in (1) of this section.

(3) Feed rolls shall be guarded by a hood or suitable guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be fastened to the frame carrying the rolls so as to remain in adjustment for any thickness of stock.

(4) Surfacers or planers used in thicknessing multiple pieces of material simultaneously shall be provided with sectional infeed rolls having sufficient yield in the construction of the sections to provide feeding contact pressure on the stock, over the permissible range of variation in stock thickness specified or for which the machine is designed. In lieu of such yielding sectional rolls, suitable section kickback finger devices shall be provided at the infeed end.

[Order 73-5, § 296-24-16529, filed 5/9/73 and Order 73-4, § 296-24-16529, filed 5/7/73.]

WAC 296-24-16531 Profile and swing-head lathes and heel turning machine. (1) Each profile and swing-head lathe shall have all cutting heads covered by a metal guard. If such a guard is constructed of sheet metal, the material used shall be not less than one-sixteenth inch in thickness; and if cast iron is used, it shall not be less than three-sixteenths inch in thickness.

(2) Cutting heads on turning lathes, whether rotating or not, shall be covered as completely as possible by hoods or shields, which should be hinged to the machines so that they can be thrown back for making adjustments.

(3) Shoe last and spoke lathes, doweling machines, heel turning machines, and other automatic turning lathes of the rotating knife type shall be equipped with hoods enclosing the cutter blades completely except at the contact points while the stock is being cut.

(4) Lathes used for turning long pieces of stock held only between the two centers shall be equipped with long curved guards extending over the tops of the lathes in order to prevent the work pieces from being thrown out of the machines if they should become loose.

(5) Where an exhaust system is used, the guard shall form part or all of the exhaust hood and shall be constructed of metal of a thickness not less than that specified in subsection (1) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16531, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16531, filed 5/9/73 and Order 73-4, § 296-24-16531, filed 5/7/73.]

WAC 296-24-16533 Sanding machines. (1) Feed rolls of self-feed sanding machines shall be protected with a semicylindrical guard to prevent the hands of the operator from coming in contact with the in-running rolls at any point. The guard shall be constructed of heavy material, preferably metal, and firmly secured to the frame carrying rolls so as to remain in adjustment for any thickness of stock. The bottom of the guard should come down to within three-eighths inch of a plane formed by the bottom or contact face of the feed roll where it touches the stock.

(2) Each drum sanding machine shall have an exhaust hood, or other guard if no exhaust system is required, so arranged as to enclose the revolving drum, except for that portion of the drum above the table, if a table is used, which may be necessary and convenient for the application of the material to be finished.

(3) Each disk sanding machine shall have the exhaust hood, or other guard if no exhaust system is required, so arranged as to enclose the revolving disk, except for that portion of the disk above the table, if a table is used, which may be necessary for the application of the material to be finished.

(4) Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs on to a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.

[Order 73-5, § 296-24-16533, filed 5/9/73 and Order 73-4, § 296-24-16533, filed 5/7/73.]

WAC 296-24-16535 Veneer cutters and wringers. (1) Veneer slicer knives shall be guarded to prevent accidental contact with knife edge, at both front and rear.

(2) Veneer clippers shall have automatic feed or shall be provided with a guard which will make it impossible to place a finger or fingers under the knife while feeding or removing the stock.

(3) Sprockets on chain or slat-belt conveyors shall be enclosed.

(4) Where practicable, hand and foot-power guillotine veneer cutters shall be provided with rods or plates or other satisfactory means, so arranged on the feeding side that the hands cannot reach the cutting edge of the knife while feeding or holding the stock in place.

(5) Power-driven guillotine veneer cutters, except continuous feed trimmers, shall be equipped with:

(a) Starting devices which require the simultaneous action of both hands to start the cutting motion and of at least one hand on a control during the complete stroke of the knife; or

(b) An automatic guard which will remove the hands of the operator from the danger zone at every descent of the blade, used in conjunction with one-hand starting devices which require two distinct movements of the device to start the cutting motion, and so designed as to return positively to the nonstarting position after each complete cycle of the knife.

(6) Where two or more workers are employed at the same time on the same power-driven guillotine veneer cutter equipped with two-hand control, the device shall be so arranged that each worker shall be required to use both hands simultaneously on the controls to start the cutting motion, and at least one hand on a control to complete the cut.

(7) Power-driven guillotine veneer cutters, other than continuous trimmers, shall be provided, in addition to the brake or other stopping mechanism, with an emergency device which will prevent the machine from operating in the event of failure of the brake when the starting mechanism is in the nonstarting position.

[Order 73-5, § 296-24-16535, filed 5/9/73 and Order 73-4, § 296-24-16535, filed 5/7/73.]

WAC 296-24-16537 Miscellaneous machines. (1) The feed rolls of roll type glue spreaders shall be guarded by a semicylindrical guard. The bottom of the guard shall come to within three-eighths inch of a plane formed by bottom or contact face of the feed roll where it touches the stock.

(2) Drag saws shall be so located as to give at least a four-foot clearance for passage when the saw is at the extreme end of the stroke; or if such clearance is not obtainable, the saw and its driving mechanism shall be provided with a standard enclosure.

(3) For combination or universal machines each point of operation of any tool shall be guarded as required for such a tool in a separate machine.

(4) The mention of specific machines in WAC 296-24-16503 through 296-24-16535, inclusive, is not intended to exclude other machines from the requirement that suitable guards and exhaust hoods be provided to reduce to a minimum the hazard due to the point of operation of such machines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16537, filed 7/13/83, effective 9/12/83; Order 73-5, § 296-24-16537, filed 5/9/73 and Order 73-4, § 296-24-16537, filed 5/7/73.]

WAC 296-24-16539 Inspection and maintenance of machinery. (1) Dull, badly set, improperly filed, or improperly tensioned saws shall be immediately removed from service, before they begin to cause the material to stick, jam, or kick back when it is fed to the saw at normal speed. Saws to which gum has adhered on the sides shall be immediately cleaned.

(2) All knives and cutting heads of machines shall be kept sharp, properly adjusted, and firmly secured. Where two or more knives are used in one head, they shall be properly balanced.

(3) Bearings shall be kept free from lost motion and shall be well lubricated.

(4) Arbors of all circular saws shall be free from play.

(5) Sharpening or tensioning of saw blades or cutters shall be done only by persons of demonstrated skill in this kind of work.

(6) Emphasis is placed upon the importance of maintaining cleanliness around machinery, particularly as regards the effective functioning of guards and the prevention of fire hazards in switch enclosures, bearings, and motors.

(7) All cracked saws shall be removed from service.

(8) The practice of inserting wedges between the saw disk and the collar to form what is commonly known as a "wobble saw" shall not be permitted.

(9) Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(10) The knife blade of jointers shall be so installed and adjusted that it does not protrude more than one-eighth inch beyond the cylindrical body of the head. Push sticks or push blocks shall be provided at the work place in the several sizes and types suitable for the work to be done.

(11) Whenever veneer slicers or rotary veneer-cutting-machines have been shutdown for the purpose of inserting logs or to make adjustments, operators shall make sure that machine is clear and other workmen are not in a hazardous position before starting the machine.

(12) Operators shall not ride the carriage of a veneer slicer.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-24-16539, filed 7/13/83, effective 9/12/83; 82-13-045 (Order 82-22), § 296-24-16539, filed 6/11/82; Order 73-5, §

296-24-16539, filed 5/9/73 and Order 73-4, § 296-24-16539, filed 5/7/73.]

WAC 296-24-180 Abrasive wheel machinery.

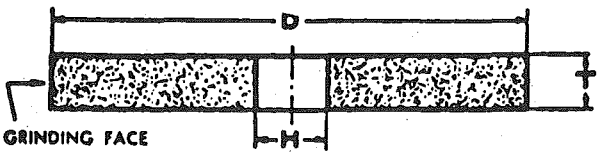
[Order 73-5, § 296-24-180, filed 5/9/73 and Order 73-4, § 296-24-180, filed 5/7/73.]

WAC 296-24-18001 Definitions. (1) "Type 1 straight wheels" means wheels having diameter, thickness, and hole size dimensions, and they should be used only on the periphery. Type 1 wheels shall be mounted between flanges. See Figure No. O-1.

(a) Limitation: Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless, or surface grinding applications. Maximum hole size for all other applications should not exceed one-half wheel diameter.

Figure No. O-1

Type 1—Straight Wheels.



Type 1—Straight Wheel.

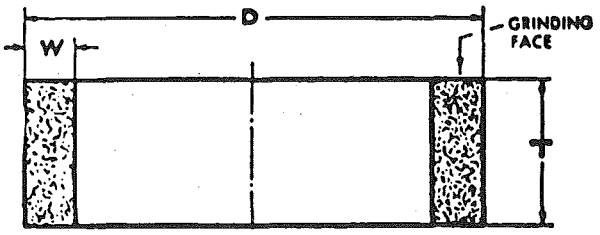
Peripheral grinding wheel having a diameter, thickness and hole.

(2) "Type 2 cylinder wheels" means wheels having diameter, wheel thickness, and rim thickness dimensions. Grinding is performed on the rim face only, dimension W. Cylinder wheels may be plain, plate mounted, inserted nut, or of the projecting stud type. See Figure No. O-2.

(a) Limitation: Rim height, T dimension, is generally equal to or greater than rim thickness, W dimension.

Figure No. O-2

(Type 2—Cylinder Wheel)



Type 2—Cylinder Wheel

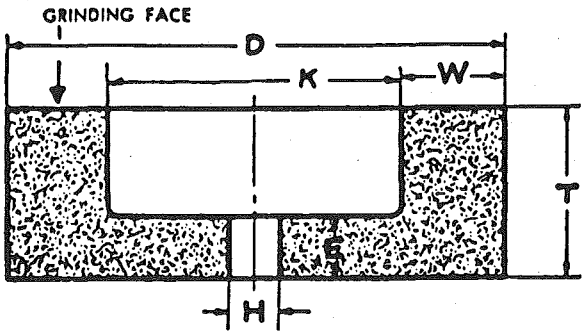
Side grinding wheel having a diameter, thickness and wall—wheel is mounted on the diameter.

(3) "Type 6 straight cup wheels" means wheels having diameter, thickness, hole size, rim thickness, and back thickness dimensions. Grinding is always performed on rim face, W dimension. See Figure No. O-3.

(a) Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the inside flat, K dimension, must be large enough to accommodate a suitable flange.

Figure No. O-3

Type 6—Straight Cup Wheels



Type 6—Straight Cup Wheel

Side grinding wheel having a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, however, differs from Type 5 in that the grinding is performed on the wall of the abrasive created by the difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type.

(4) "Type 11 flaring cup wheels" mean wheels having double diameter dimensions D and J and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always performed on rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for type 6 straight sided cup wheels definition. See Figure No. O-4.

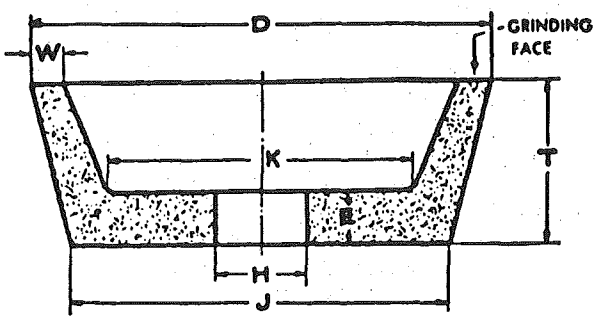
(a) Limitation: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition when unthreaded hole wheels are specified the inside flat, K dimension, shall be large enough to accommodate a suitable flange.

(5) "Modified types 6 and 11 wheels (terrazzo)" mean some type 6 and 11 cup wheels used in the terrazzo trade having tapered K dimensions to match a special tapered flange furnished by the machine builder. See Figure No. O-5.

(a) Limitation: These wheels shall be mounted only with a special tapered flange.

Figure No. O-4

Type 11—Flaring Cup Wheels

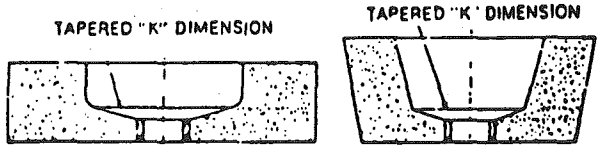


Type 11—Flaring Cup Wheel

Side grinding wheel having a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W).

Figure No. O-5

Type 6 & 11—Wheels (Terrazzo)



Type 6 (Terrazzo) Type 11 (Terrazzo)

Typical examples of modified types 6 and 11 wheels (terrazzo) showing tapered K dimensions.

(6) "Types 27 and 28 depressed center wheels" mean wheels having diameter, thickness, and hole size dimensions. Both types are reinforced, organic bonded wheels having offset hubs which permit side and peripheral grinding operations without interference with the mounting. Type 27 wheels are manufactured with flat grinding rims permitting notching and cutting operations. Type 28 wheels have saucer shaped grinding rims.

(a) Limitations: Special supporting, back adapter and inside flange nuts are required for the proper mounting of these types of wheels subject to limitations of WAC 296-24-18007 (4)(a) and (b).

(b) Mounts which are affixed to the wheel by the manufacturer may not require an inside nut and shall not be reused.

(7) "Type 27A depressed center, cutting-off wheels" mean wheels having diameter, thickness, and hole size dimensions. They are reinforced, organic bonded, offset hub type wheels, usually 16 inches diameter and larger, specially designed for use on cutting-off machines where mounting nut or outer flange interference cannot be tolerated.

(a) Limitations: See WAC 296-24-18007.

(8) "Surface feet per minute" (s.f.p.m.) means the distance in feet any one abrasive grain on the peripheral surface of a grinding wheel travels in 1 minute.

$$\text{Surface Feet Per Minute} = \frac{3.1416 \times \text{diameter in inches} \times \text{r.p.m.}}{12}$$

or

$$.262 \times \text{diameter in inches} \times \text{r.p.m.}$$

Examples: (a) 24-inch diameter wheel, 1,000 revolutions per minute. Surface Feet per minute .262 X 24 X 1,000 = 6,288 s.f.p.m.

(b) 12-inch diameter wheel, 1,000 revolutions per minute. Surface Feet per minute .262 X 12 X 1,000 = 3,144 s.f.p.m.

(9) "Flanges" means collars, discs or plates between which wheels are mounted and are referred to as adaptor, sleeve, or back up type. See WAC 296-24-18007 for full description.

(10) "Snagging" means grinding which removes relatively large amounts of material without regard to close tolerances or surface finish requirements.

(11) "Off-hand grinding" means the grinding of any material or part which is held in the operator's hand.

(12) "Safety guard" means an enclosure designed to restrain the pieces of the grinding wheel and furnish all possible protection in the event that the wheel is broken in operation. See WAC 296-24-18005.

(13) "Cutting off wheels" mean wheels having diameter, thickness and hole size dimensions and are subject to all limitations of mounting and use listed for type 1 wheels, the definition in WAC 296-24-18001(1) and 296-24-18009. They may be steel centered, diamond abrasive or organic bonded abrasive of the plain or reinforced type.

(a) Limitation: Cutting off wheels are recommended only for use on specially designed and fully guarded machines and are subject to the following maximum thickness and hole size limitations.

Wheel diameter:	Max. thickness (inch)
6 inch and smaller	3/16
Larger than 6 inches to 12 inches	1/4
Larger than 12 inches to 23 inches	3/8
Larger than 23 inches	1/2

(b) Maximum hole size for cutting-off wheels should not be larger than 1/4-wheel diameter.

(14) "Abrasive wheel" means a cutting tool consisting of abrasive grains held together by organic or inorganic bonds. Diamond and reinforced wheels are included.

(15) "Organic wheels" means wheels which are bonded by means of an organic material such as resin, rubber, shellac, or other similar bonding agent.

(16) "Inorganic wheels" means wheels which are bonded by means of inorganic material such as clay, glass, porcelain, sodium silicate, magnesium oxychloride, or metal. Wheels bonded with clay, glass, porcelain or related ceramic materials are characterized as "vitrified bonded wheels."

[Order 73-5, § 296-24-18001, filed 5/9/73 and Order 73-4, § 296-24-18001, filed 5/7/73.]

WAC 296-24-18003 General requirements. (1) Machine guarding. Abrasive wheels shall be used only on machines provided with safety guards as defined in WAC 296-24-18005, except:

(a) Wheels used for internal work while within the work being ground;

(b) Mounted wheels used in portable operations 2 inches and smaller in diameter; and

(c) Types 16, 17, 18, 18R, and 19 cones, plugs, and threaded hole pot balls where the work offers protection.

(2) Guard design. The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard, except:

(a) Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted; and

(b) The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

(3) Flanges. Grinding machines shall be equipped with flanges in accordance with WAC 296-24-18007.

(4) Work rests. On offhand grinding machines, work rests shall be used to support the work. They shall be of rigid construction and designed to be adjustable to compensate for wheel wear. Work rests shall be kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from being jammed between the wheel and the rest, which may cause wheel breakage. The work rest shall be securely clamped after each adjustment. The adjustment shall not be made with the wheel in motion.

(5) Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface are not covered by WAC 296-24-18003.

[Order 73-5, § 296-24-18003, filed 5/9/73; Order 73-4, § 296-24-18003, filed 5/7/73.]

WAC 296-24-18005 Guarding of abrasive wheel machinery. (1) Cup wheels. Cup wheels (types 6 and 11) shall be protected by:

(a) Safety guards as specified in (1) through (10) of this section.

(b) Band type guards as specified in (11) of this section; and

(c) Special "revolving cup guards" which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all requirements of this section. It is necessary to maintain clearance between the wheel side and the guard. This clearance shall not exceed one-sixteenth inch.

(2) Guard exposure angles. The maximum exposure angles specified in (3) through (8) of this section shall not be exceeded. Visors or other accessory equipment shall not be included as a part of the guard when measuring the guard opening, unless such equipment has strength equal to that of the guard.

(3) Bench and floor stands. The angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as bench and floor stands should not exceed 90° or one-fourth of the periphery. This exposure shall begin at a point not more than 65° above the horizontal plane of the wheel spindle. (See Figures O-6 and O-7 and (9) of this section.)

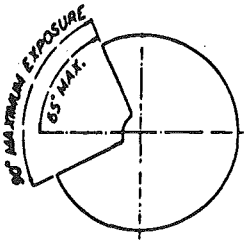


Figure No. O-6

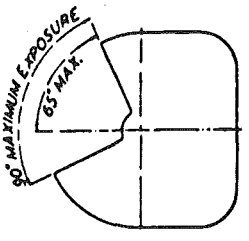


Figure No. O-7

Wherever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure shall not exceed 125°. (See Figures O-8 and O-9.)

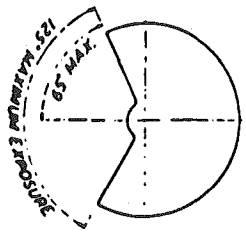


Figure No. O-8

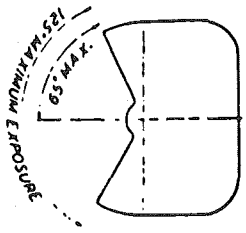


Figure No. O-9

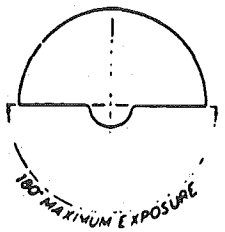


Figure No. O-14

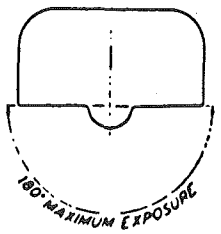


Figure No. O-15

(4) Cylindrical grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on cylindrical grinding machines shall not exceed 180°. This exposure shall begin at a point not more than 65° above the horizontal plane of the wheel spindle. (See Figures O-10 and O-11 and (9) of this section.)

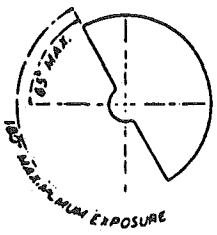


Figure No. O-10

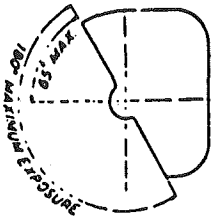


Figure No. O-11

(5) Surface grinders and cutting-off machines. The maximum angular exposure of the grinding wheels periphery and sides for safety guards used on cutting-off machines and on surface grinding machines which employ the wheel periphery shall not exceed 150°. This exposure shall begin at a point not less than 15° below the horizontal plane of the wheel spindle. (See Figures O-12 and O-13.)

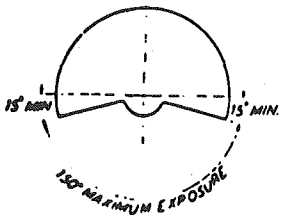


Figure No. O-12

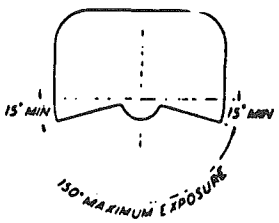


Figure No. O-13

(6) Swing frame grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on machines known as swing frame grinding machines shall not exceed 180°, and the top half of the wheel shall be enclosed at all times. (See Figures O-14 and O-15.)

(7) Automatic snagging machines. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on grinders known as automatic snagging machines shall not exceed 180° and the top half of the wheel shall be enclosed at all times. (See Figures O-14 and O-15.)

(8) Top grinding. Where the work is applied to the wheel above the horizontal centerline, the exposure of the grinding wheel periphery shall be as small as possible and shall not exceed 60°. (See Figures O-16 and O-17.)

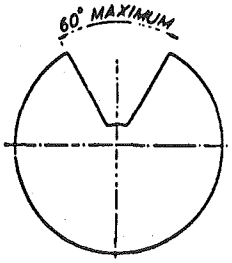


Figure No. O-16

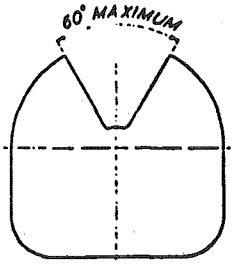


Figure No. O-17

(9) Exposure adjustment. Safety guards of the types described in (3) and (4) of this section, where the operator stands in front of the opening, shall be constructed so that the peripheral protecting member can be adjusted to the constantly decreasing diameter of the wheel. The maximum angular exposure above the horizontal plane of the wheel spindle as specified in (3) and (4) of this section shall never be exceeded, and the distance between the wheel periphery and the adjustable tongue or the end of the peripheral member at the top shall never exceed one-fourth inch. (See Figures O-18, O-19, O-20, O-21, O-22, and O-23.)

(10) Material requirements and minimum dimensions. (a) See Figures O-36 and O-37 and Table O-9 for minimum basic thickness of peripheral and side members for various types of safety guards and classes of service.

(b) If operating speed does not exceed 8,000 surface feet per minute cast iron safety guards, malleable iron guards or other guards as described in item (10)(c) of this subsection.

(c) Cast steel, or structural steel, safety guards as specified in Figures O-36 and O-37 and Table O-9 shall be used where operating speeds of wheels are faster

than 8,000 surface feet per minute up to a maximum of 16,000 surface feet per minute.

(d) For cutting-off wheels 16 inches diameter and smaller and where speed does not exceed 16,000 surface feet per minute, cast iron or malleable iron safety guards as specified in Figures O-36 and O-37 and in Table O-9 shall be used.

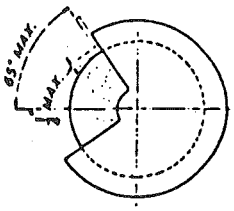


Figure No. O-18

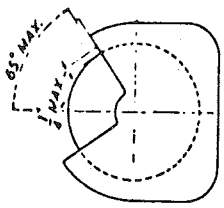


Figure No. O-19

CORRECT

Showing adjustable tongue giving required angular protection for all sizes of wheel used.

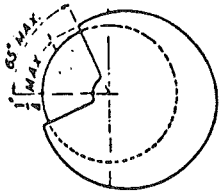


Figure No. O-20

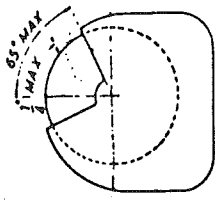


Figure No. O-21

CORRECT

Showing movable guard with opening small enough to give required protection for smallest size wheel used.

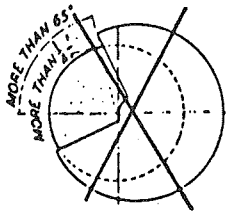


Figure No. O-22

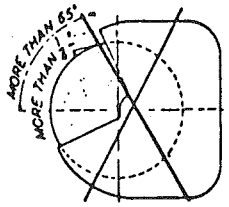


Figure No. O-23

INCORRECT

Showing movable guard with size of opening correct for full size wheel but too large for smaller wheels.

(e) For cutting-off wheels larger than 16 inches diameter and where speed does not exceed 14,200 surface feet per minute, safety guards as specified in Figures O-27 and O-28, and in Table O-1 shall be used.

(f) For thread grinding wheels not exceeding 1 inch in thickness cast iron or malleable iron safety guards as specified in Figures O-36 and O-37, and in Table O-9 shall be used.

(11) Band type guards—General specifications. Band type guards shall conform to the following general specifications:

(a) The bands shall be of steel plate or other material of equal or greater strength. They shall be continuous, the ends being either riveted, bolted, or welded together in such a manner as to leave the inside free form projections.

(b) The inside diameter of the band shall not be more than 1 inch larger than the outside diameter of the wheel, and shall be mounted as nearly concentric with the wheel as practicable.

(c) The band shall be of sufficient width and its position kept so adjusted that at no time will the wheel protrude beyond the edge of the band a distance greater than that indicated in Figure O-29 and in Table O-2 or the wall thickness (W), whichever is smaller.

(12) Guard design specifications. Abrasive wheel machinery guards shall meet the design specifications of the American National Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, ANSI B7.1-1970. This requirement shall not apply to natural sandstone wheels or metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface.

[Order 76-6, § 296-24-18005, filed 3/1/76; Order 73-5, § 296-24-18005, filed 5/9/73 and Order 73-4, § 296-24-18005, filed 5/7/73.]

WAC 296-24-18007 Flanges. (1) General requirements. All abrasive wheels shall be mounted between flanges which shall not be less than one-third the diameter of the wheel.

(a) Exceptions:

(i) Mounted wheels.

(ii) Portable wheels with threaded inserts or projecting studs.

(iii) Abrasive discs (inserted nut, inserted washer and projecting stud type).

(iv) Plate mounted wheels.

(v) Cylinders, cup, or segmental wheels that are mounted in chucks.

(vi) Types 27 and 28 wheels.

(vii) Certain internal wheels.

(viii) Modified types 6 and 11 wheels (terrazzo).

(ix) Cutting-off wheels, Types 1 and 27A (see (b) and (c) of this section).

(b) Type 1 cutting-off wheels are to be mounted between properly relieved flanges which have matching bearing surfaces. Such flanges shall be at least one-fourth the wheel diameter.

(c) Type 27A cutting-off wheels are designed to be mounted by means of flat, not relieved, flanges having matching bearing surfaces and which may be less than one-third but shall not be less than one-fourth the wheel diameter. (See Figure O-24 for one such type of mounting.)

(d) There are three general types of flanges:

(i) Straight relieved flanges (see Figure O-32);

(ii) Straight unrelieved flanges (see Figure O-30);

(iii) Adaptor flanges (see Figures O-33 and O-34).

(e) Regardless of flange type used, the wheel shall always be guarded. Blotters shall be used in accordance with (6) of this section.

(2) Design and material.

(a) Flanges shall be of such design as to satisfactorily transmit the driving torque from the spindle to the grinding wheel.

(b) Flanges may be made of steel, cast iron, or other material of equal or greater strength and rigidity.

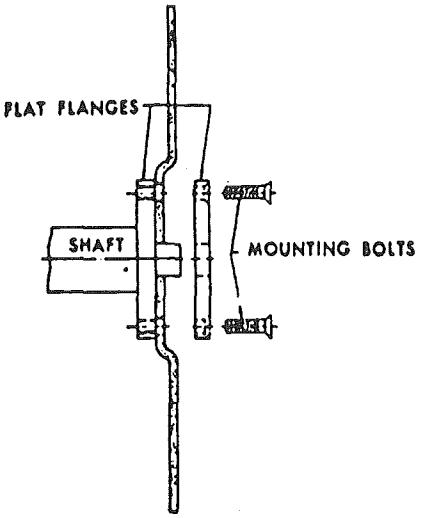


Figure No. O-24

The type 27A wheel is mounted between flat nonrelieved flanges of equal bearing surfaces.

(c) Flanges shall be designed with respect to rigidity so that when tightened, the radial width of bearing surface of contact on the wheel is maintained. (See Table O-6 and Figure O-32.)

(3) Finish and balance. Flanges shall be dimensionally accurate and in good balance. There shall be no rough surfaces or sharp edges.

(4) Uniformity of diameter.

(a) Both flanges, of any type, between which a wheel is mounted, shall be of the same diameter and have equal bearing surface. Exceptions are set forth in (4)(b) and (c).

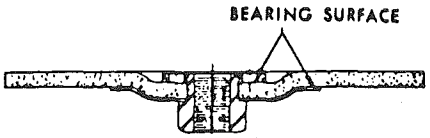
(b) Type 27 and Type 28 wheels, because of their shape and usage, require specially designed adaptors. The back flange shall extend beyond the central hub or raised portion and contact the wheel to counteract the side pressure on the wheel in use. The adaptor nut which is less than the minimum one-third diameter of wheel fits in the depressed side of wheel to prevent interference in side grinding and serves to drive the wheel by its clamping force against the depressed portion of the back flange. The variance in flange diameters, the adaptor nut being less than one-third wheel diameter, and the use of side pressure in wheel operation limit the use to reinforced organic bonded wheels. Mounts which are affixed to the wheel by the manufacturer shall not be reused. Type 27 and Type 28 wheels shall be used only with a safety guard located between wheel and operator during use. (See Figure O-24-A.)

(c) Modified Types 6 and 11 wheels (terrazzo) with tapered K dimension.

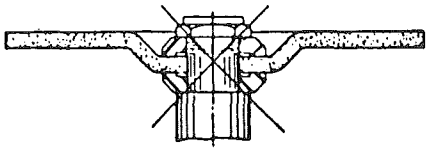
(5) Recess and undercut. (a) Straight relieved flanges made according to Table O-6 and Figure O-32 shall be recessed at least one-sixteenth inch on the side next to the wheel for a distance as specified in Table O-6.

(b) Straight flanges of the adaptor or sleeve type (Table O-7 and Figures O-33 and O-34) shall be undercut so that there will be no bearing on the sides of the wheel within one-eighth inch of the arbor hole.

Figure No. O-24-A



CORRECT
PROPERLY MOUNTED
TYPE 27 WHEEL



INCORRECT
IMPROPERLY MOUNTED
TYPE 27 WHEEL

Types 27 and 28 wheels, because of their shape, require specially designed adaptors.

(6) Blotters.

(a) Blotters (compressible washers) shall always be used between flanges and abrasive wheel surfaces to insure uniform distribution of flange pressure. (See WAC 296-24-18009.)

(b) Exception:

(i) Mounted wheels.

(ii) Abrasive discs (inserted nut, inserted washer, and projecting stud type).

(iii) Plate mounted wheels.

(iv) Cylinders, cups, or segmental wheels that are mounted in chucks.

(v) Types 27 and 28 wheels.

(vi) Certain Type 1 and Type 27A cutting-off wheels.

(vii) Certain internal wheels.

(viii) Type 4 tapered wheels.

(ix) Diamond wheels, except certain vitrified diamond wheels.

(x) Modified types 6 and 11 wheel (terrazzo)—blotters applied flat side of wheel only.

(7) Driving flange. The driving flange shall be securely fastened to the spindle and the bearing surface shall run true. When more than one wheel is mounted between a single set of flanges, wheels may be cemented together or separated by specially designed spacers. Spacers shall be equal in faces. (See WAC 296-24-18009(6).)

(8) Dimensions.

(a) Tables O-4 and O-6 and Figures O-30 and O-32 show minimum dimensions for straight relieved and unrelieved flanges for use with wheels with small holes that fit directly on the machine spindle. Dimensions of such flanges shall never be less than indicated and should be greater where practicable.

(b) Table O-5, and Table O-7 and Figures O-31, O-33, O-34 show minimum dimensions for straight adaptor flanges for use with wheels having holes larger than the spindle. Dimensions of such adaptor flanges shall never be less than indicated and should be greater where practicable.

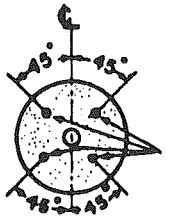
(c) Table O-8 and Figure O-35 show minimum dimensions for straight flanges that are an integral part of wheel sleeves which are frequently used on precision grinding machines. Dimensions of such flanges shall never be less than indicated and should be greater where practicable.

(9) Repairs and maintenance. All flanges shall be maintained in good condition. When the bearing surfaces become worn, warped, sprung, or damaged they should be trued or refaced. When refacing or truing, care shall be exercised to make sure that proper relief and rigidity is maintained as specified in (2) and (5) of this section and they shall be replaced when they do not conform to these requirements and Table O-4, Figure O-30, Table O-5, Figure O-31, Table O-6, Figure O-32, and Table O-35. Failure to observe these rules might cause excessive flange pressure around the hole of the wheel. This is especially true of wheel-sleeve or adaptor flanges.

[Order 73-5, § 296-24-18007, filed 5/9/73 and Order 73-4, § 296-24-18007, filed 5/7/73.]

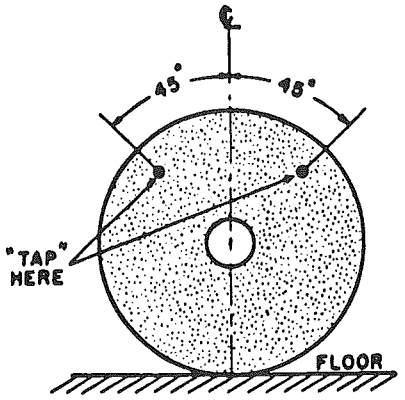
WAC 296-24-18009 Mounting. (1) Inspection. Immediately before mounting, all wheels shall be closely inspected and sounded by the user (ring test) to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel. Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels. If they sound cracked (dead), they shall not be used. This is known as the "ring test."

(a) Wheels must be dry and free from sawdust when applying the ring test, otherwise the sound will be deadened. It should also be noted that organic bonded wheels do not emit the same clear metallic ring as do vitrified and silicate wheels.



Light Wheels
Suspend from hole by
small pin or flanger

Figure No. O-25



Heavy Wheels
Support on clean hard floor

Figure No. O-26

(b) "Tap" wheels about 45° each side of the vertical centerline and about 1 or 2 inches from the periphery as indicated by the spots in Figure O-25 and Figure O-26. Then rotate the wheel 45° and repeat the test. A sound and undamaged wheel will give a clear metallic tone. If cracked, there will be a dead sound and not a clear "ring."

(2) Arbor size. Grinding wheels shall fit freely on the spindle and remain free under all grinding conditions. A controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion. To accomplish this, the machine spindle shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

(3) Surface condition. All contact surfaces of wheels, blotters and flanges shall be flat and free of foreign matter.

(4) Bushing. When a bushing is used in the wheel hole it shall not exceed the width of the wheel and shall not contact the flanges.

(5) Blotters. When blotters or flange facings of compressible material are required, they shall cover entire contact area of wheel flanges. Highly compressible material such as blotting paper as normally used should not exceed .025 inch in thickness. If material of lower compressibility is used, greater thickness may be necessary. Blotters need not be used with the following types of wheels:

(a) Mounted wheels.

(b) Abrasive discs (inserted nut, inserted washer, and projecting–stud type).

(c) Plate mounted wheels.

(d) Cylinders, cups, or segmental wheels that are mounted in chucks.

(e) Types 27 and 28 wheels.

(f) Certain Type 1 and Type 27A cutting–off wheels.

(g) Certain internal wheels.

(h) Type 4 tapered wheels.

(i) Diamond wheels, except certain vitrified diamond wheels.

(6) Multiple wheel mounting. When more than one wheel is mounted between a single set of flanges, wheels may be cemented together or separated by specially designed spacers. Spacers shall be equal in diameter to the mounting flanges and have equal bearing surfaces. When mounting wheels which have not been cemented together, or ones which do not utilize separating spacers, care must be exercised to use wheels specially manufactured for that purpose.

(7) Replacing safety guard. After mounting a wheel, care should be taken to see that the safety guard is properly positioned before starting the wheel.

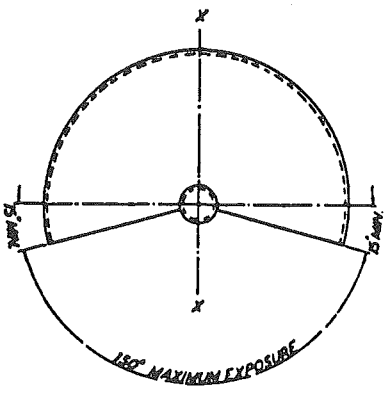
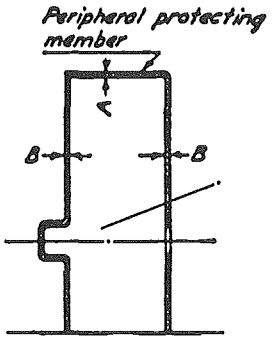


Figure No. O–27



Section X–X

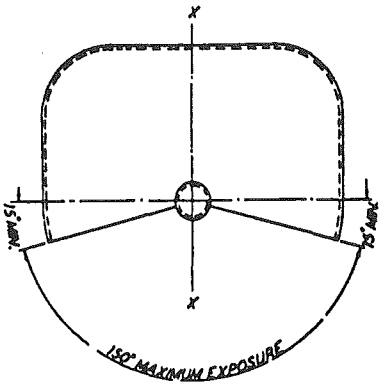


Figure No. O–28

TABLE O–1

MINIMUM BASIC THICKNESS FOR PERIPHERAL AND SIDE MEMBERS FOR SAFETY GUARDS USED WITH CUTTING–OFF WHEELS

(TABLE O–1: Part 1—6" through 30")

Material used in construction of guard	Maximum thickness of cutting off wheel	Speed not to exceed	Cutting off wheel diameters					
			6 to 11 inches		Over 11 to 20 in.		Over 20 to 30 in.	
			A	B	A	B	A	B
Structural steel min. tensile strength 60,000 p.s.i.)	1/2 inch or less	14,200 SFPM	1/16	1/16	3/32	3/32	1/8	1/8
	1/2 inch or less	16,000 SFPM	3/32	1/8	1/8	1/8	3/16	1/8

(TABLE O-1: Part 2--Over 30" through 72")

Material used in construction of guard	Maximum thickness of cutting off wheel	Speed not to exceed	Cutting off wheel diameters			
			Over 30 to 48 in.		Over 48 to 72 in.	
			A	B	A	B
Structural steel min. tensile strength 60,000 p.s.i.)	1/2 inch or less	14,200 SFPM	3/16	3/16	1/4	1/4
	1/2 inch or less	16,000 SFPM	1/4	3/16	5/16	1/4

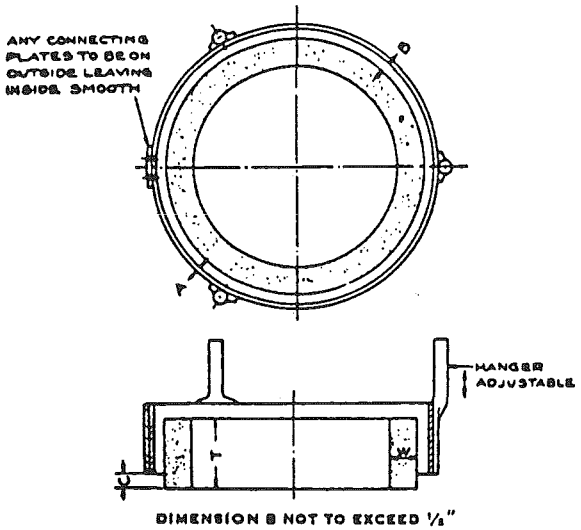


Figure No. O-29

TABLE O-2

EXPOSURE VERSUS WHEEL THICKNESS

Overall thickness of wheel (T) (inches)	Maximum exposure of wheel (C) (inches)
1/2	1/4
1	1/2
2	3/4
3	1
4	1 1/2
5 and over	2

TABLE O-3

GUIDE FOR CONSTRUCTION OF BAND TYPE
(Maximum Wheel Speed 7,000 SFPM)

Minimum material specifications	Diameter of wheel	Minimum thickness of band A	Minimum diameter of rivets	Maximum distance between centers of rivets
	Inches	Inches	Inches	Inches
Hot rolled steel SAE 1008	Under 8	1/16	3/16	3/4
	8 to 24	1/8	1/4	1
	Over 24 to 30	1/4	3/8	1 1/4

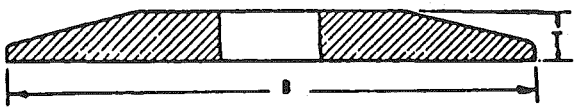


Figure No. O-30

Driving flange secured to spindle for use only on portable wheels with threaded inserts or projecting studs.

TABLE O-4

MINIMUM DIMENSIONS FOR STRAIGHT UNRELIEVED FLANGES FOR WHEELS WITH THREADED INSERTS OR PROJECTING STUDS

A	B[1]	T
Diameter of wheel	Minimum outside diameter of flange	Minimum thickness of flange
Inches	Inches	Inches
1	5/8	1/8
2	1	1/8
3	1	3/16
4	1 3/8	3/16
5	1 3/4	1/4
6	2	3/8

[1] Note: Must be large enough to extend beyond the bushing. Where prong anchor or cupback bushing are used, this footnote does not apply.

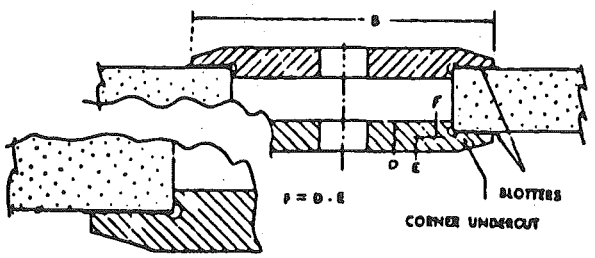


Figure No. O–31

TABLE O–5

MINIMUM DIMENSIONS FOR STRAIGHT ADAPTOR FLANGE FOR ORGANIC BONDED WHEELS OVER 1 1/4 INCHES THICK[1]

Wheel diameter	Wheel hole diameter	B Minimum flange diameter	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut	F[1] (D–E) Minimum thickness
Inches	Inches	Inches	Inches	Inches	Inches
12 to 14	4	6	7/8	3/8	1/2
	5	7	7/8	3/8	1/2
	6	8	7/8	3/8	1/2
Larger than 14 to 18	4	6	7/8	3/8	1/2
	5	7	7/8	3/8	1/2
	6	8	7/8	3/8	1/2
	7	9	7/8	3/8	1/2
	8	10	7/8	3/8	1/2
Larger than 18 to 24	6	8	1	1/2	1/2
	7	9	1	1/2	1/2
	8	10	1	1/2	1/2
	10	12	1	1/2	1/2
	12	14	1	1/2	1/2
Larger than 24 to 30	12	15	1	1/2	1/2
Larger than 30 to 36	12	15	1 3/8	7/8	1/2

[1]For wheels under 1/4 inches thick F dimension shall not exceed 40 percent of wheel thickness.

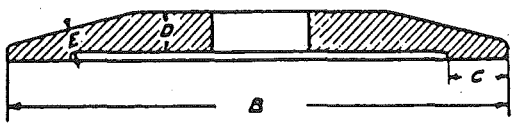


Figure No. O–32

Driving flange secured to spindle.

TABLE O–6

MINIMUM DIMENSIONS FOR STRAIGHT RELIEVED FLANGES

A[1] Diameter of wheel	B Minimum outside diameter of flanges	C Radial width of bearing surface Minimum	C Radial width of bearing surface Maximum	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of recess
Inches	Inches	Inches	Inches	Inches	Inches
1	3/6	1/16	1/8	1/16	1/16
2	3/4	1/8	3/16	1/8	3/32
3	1	1/8	3/16	3/16	3/32
4	1 3/8	1/8	3/16	3/16	1/8
5	1 3/4	3/16	1/4	1/4	1/8
6	2	1/4	1/2	3/8	3/16
7	2 1/2	1/4	1/2	3/8	3/16
8	3	1/4	1/2	3/8	3/16
10	3 1/2	5/16	5/8	3/8	1/4
12	4	5/16	5/8	1/2	5/16
14	4 1/2	3/8	3/4	1/2	5/16
16	5 1/2	1/2	1	1/2	5/16
18	6	1/2	1	5/8	3/8
20	7	5/8	1 1/4	5/8	3/8
22	7 1/2	5/8	1 1/4	5/8	7/16
24	8	3/4	1 1/4	5/8	7/16
26	8 1/2	3/4	1 1/4	5/8	1/2
28	10	7/8	1 1/2	3/4	1/2
30	10	7/8	1 1/2	3/4	5/8
36	12	1	2	7/8	3/4
42	14	1	2	7/8	3/4
48	16	1 1/4	2	1 1/8	1
60	20	1 1/4	2	1 1/4	1 1/8
72	24	1 1/2	2 1/2	1 3/8	1 1/4

[1]Flanges for wheels under 2 inches diameter may be unrelieved and shall be maintained flat and true.

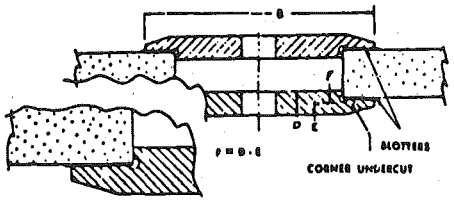


Figure No. O–33

Central Nut Mounting

Driving flange secured to spindle.

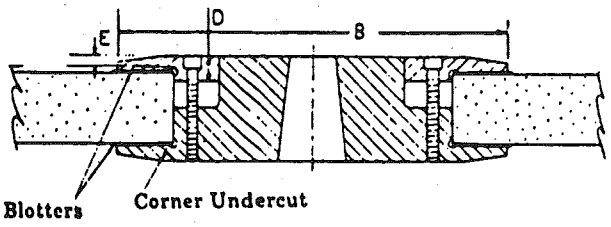


Figure No. O-34

Multiple Screw Mounting

Driving flange secured to spindle.

TABLE O-7

MINIMUM DIMENSIONS FOR STRAIGHT FLANGES FOR MECHANICAL GRINDERS 12,500 S.F.P.M. TO 16,500 S.F.P.M.[1]

Wheel diameter	Wheel hole diameter	B Minimum flange diameter	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut	F^2(D–E) minimum thickness
20	6	8	1	1/2	1/2
20	8	10	1 1/2	3/4	3/4
24	12	15	2	1	1
30	12	15	2	1	1
36	12	15	2	1	1

[1]Flange shall be of steel, quality SAE 1040 or equivalent, annealed plate, heat treated to R_c 25–30.

[2]For wheels under 1 1/4 inch thick F dimension shall not exceed 40 percent of wheel thickness.

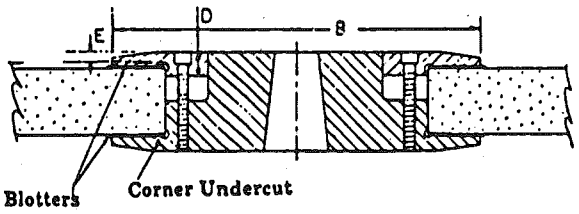


Figure No. O-35

Driving flange secured to spindle.

TABLE O-8

MINIMUM DIMENSIONS FOR STRAIGHT FLANGES USED AS WHEEL SLEEVES FOR PRECISION GRINDING ONLY

Wheel diameter	Wheel hole diameter	B Minimum outside diameter of flange	D Minimum thickness of flange at bore	E Minimum thickness of flange at edge of undercut
Inches	Inches	Inches	Inches	Inches
12 to 14	5	7	1/2	7/16
	5	7	5/8	7/16
	6	8	5/8	7/16
Larger than	8	10	5/8	7/16
14 to 20	10	11 1/2	5/8	7/16
	12	13 1/2	5/8	7/16
Larger than	8	10	3/4	1/2
20 to 30	10	11 1/2	3/4	1/2
	12	13 1/2	3/4	1/2
	16	17 1/2	3/4	1/2
Larger than	12	13 1/2	3/4	1/2
30 to 42	16	17 1/2	3/4	1/2
	18	19 1/2	3/4	1/2
	20	21 1/2	3/4	1/2
Larger than	16	20	1	3/4
42 to 60	20	24	1	3/4
	24	29	1 1/8	7/8

Note: These flanges may be clamped together by means of a central nut, or by a series of bolts or some other equivalent means of fastening. For hole sizes smaller than shown in this table, use table 12.

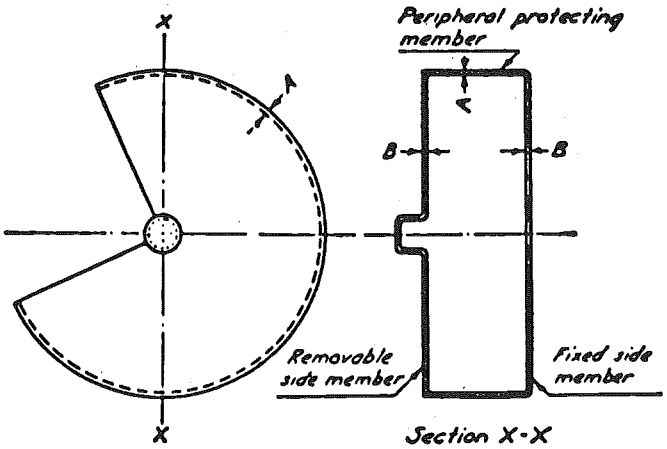


Figure No. O-36

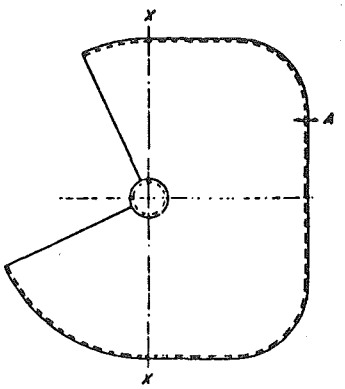


Figure No. O-37

TABLE O-9

MINIMUM BASIC THICKNESSES OF PERIPHERAL AND SIDE MEMBERS FOR SAFETY GUARDS

(TABLE O-9: Part 1--Diameters 3" to 12")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: 3 to 6 inches A	3 to 6 inches B	Over 6 to 12 inches A	Over 6 to 12 inches B
	Inches	Inches		Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	1/4	1/4	3/8	5/16
	4	5/16	5/16	3/8	5/16
	6	3/8	5/16	1/2	7/16
	8			5/8	9/16
	10			3/4	11/16
	16				
	20				
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	1/4	1/4	3/8	5/16
	4	5/16	5/16	3/8	5/16
	6	3/8	5/16	1/2	7/16
	8			1/2	7/16
	10			1/2	7/16
	16				
	20				
Materials satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	1/4	1/4	5/16	5/16
	4	1/4	1/4	1/2	1/2
	6	3/8	1/4	3/4	5/8
	8			7/8	3/4
	10			1	7/8
	16				
	20				

(TABLE O-9: Part 1--Diameters 3" to 12")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: 3 to 6 inches A	3 to 6 inches B	Over 6 to 12 inches A	Over 6 to 12 inches B
	Inches	Inches		Inches	
Structural steel (min. tensile strength 60,000 p.s.i.).	2	1/8	1/16	5/16	1/4
	4	1/8	1/16	3/8	5/16
	6	3/16	1/16	1/2	3/8
	8			1/2	3/8
	10			9/16	7/16
	16				
	20				

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 2--Diameters Over 12" to 20")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 12 to 16 inches A	Over 12 to 16 inches B	Over 16 to 20 inches A	Over 16 to 20 inches B
	Inches	Inches		Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	1/2	3/8	5/8	1/2
	4	1/2	3/8	3/4	5/8
	6	5/8	1/2	1	5/8
	8	7/8	3/4	1	3/4
	10	7/8	3/4	1	3/4
	16	1-1/8	1	1-1/4	1
	20			1-3/8	1-1/8
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	1/2	3/8	5/8	1/2
	4	1/2	3/8	5/8	1/2
	6	5/8	1/2	3/4	5/8
	8	5/8	1/2	3/4	5/8
	10	5/8	1/2	3/4	5/8
	16	13/16	11/16	13/16	11/16
	20			7/8	3/4
Materials satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	3/8	3/8	1/2	7/16
	4	1/2	1/2	9/16	1/2
	6	3/4	5/8	3/4	5/8
	8	7/8	3/4	7/8	3/4
	10	1	7/8	1	7/8
	16	1-1/4	1-1/8	1-1/4	1-1/8
	20			1-3/8	1-1/4

(TABLE O-9: Part 2--Diameters Over 12" to 20")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 12 to 16 inches A	Over 12 to 16 inches B	Over 16 to 20 inches A	Over 16 to 20 inches B
	Inches	Inches		Inches	
Structural steel (min. tensile strength 60,000 p.s.i.).	2	5/16	1/4	5/16	1/4
	4	3/8	5/16	3/8	5/16
	6	7/16	3/8	7/16	3/8
	8	9/16	7/16	9/16	7/16
	10	5/8	1/2	5/8	1/2
	16	5/8	9/16	3/4	5/8
	20			13/16	11/16

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 3--Diameters Over 20" to 40")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 20 to 24 inches A	Over 20 to 24 inches B	Over 24 to 40 inches A	Over 24 to 40 inches B
	Inches	Inches		Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	7/8	5/8	1	3/4
	4	1	5/8	1-1/8	3/4
	6	1-1/8	3/4	1-1/4	7/8
	8	1-1/8	3/4	1-1/4	7/8
	10	1-1/8	3/4	1-1/4	7/8
	16	1-5/16	1	1-7/16	1-1/16
	20	1-3/8	1-1/8	1-1/2	1-3/8
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	3/4	5/8	7/8	3/4
	4	3/4	5/8	7/8	3/4
	6	7/8	5/8	1	3/4
	8	7/8	5/8	1	3/4
	10	7/8	5/8	1	3/4
	16	1	3/4	1-1/8	7/8
	20	1	3/4	1-1/8	7/8
Materials satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	5/8	1/2	3/4	5/8
	4	5/8	1/2	3/4	5/8
	6	13/16	11/16	13/16	11/16
	8	7/8	3/4	15/16	13/16
	10	1-1/8	15/16	1-1/8	1
	16	1-1/4	1-1/8	1-1/4	1-1/8
	20	1-3/8	1-1/4	1-7/16	1-5/16

(TABLE O-9: Part 3--Diameters Over 20" to 40")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 20 to 24 inches A	Over 20 to 24 inches B	Over 24 to 40 inches A	Over 24 to 40 inches B
	Inches	Inches		Inches	
Structural steel (min. tensile strength 60,000 p.s.i.).	2	5/16	1/4	3/8	5/16
	4	3/8	5/16	3/8	5/16
	6	7/16	3/8	7/16	3/8
	8	9/16	7/16	5/8	1/2
	10	5/8	1/2	5/8	1/2
	16	3/4	5/8	13/16	11/16
	20	13/16	11/16	7/8	3/4

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

(TABLE O-9: Part 4--Diameters Over 40" to 48")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 40 to 48 inches A	Over 40 to 48 inches B
	Inches	Inches	
Material satisfactory[1] for speeds up to 8,000 SFPM. Cast iron (min. tensile strength 20,000 p.s.i.) Class 20.	2	1-1/4	1
	4	1-3/8	1
	6	1-1/2	1-1/8
	8	1-1/2	1-1/8
	10	1-1/2	1-1/8
	16	1-3/4	1-3/8
	20	2	1-5/8
Material satisfactory[1] for speeds up to 9,000 SFPM. Malleable iron (min. tensile strength 50,000 p.s.i.) Grade 32510.	2	1	7/8
	4	1-1/8	7/8
	6	1-1/4	7/8
	8	1-1/4	7/8
	10	1-1/4	7/8
	16	1-3/8	1
	20	1-1/2	1-1/8
Material satisfactory[1] for speeds up to 16,000 SFPM. Steel castings (min. tensile strength 60,000 p.s.i.) Grade V60-30.	2	7/8	3/4
	4	1	3/4
	6	1-1/8	3/4
	8	1-3/8	1
	10	1-7/16	1-1/16
	16	1-13/16	1-7/16
	20	2-1/16	1-11/16

(TABLE O-9: Part 4--Diameters Over 40" to 48")

Material used in construction of guard	Maximum thickness of grinding wheel	Grinding wheel diameters: Over 40 to 48 inches A	B
	Inches	Inches	
Structural steel (min. tensile strength 60,000 p.s.i.).	2	1/2	3/8
	4	1/2	3/8
	6	3/4	1/2
	8	3/4	1/2
	10	7/8	5/8
	16	1-1/16	13/16
	20	1-3/16	15/16

[1]The recommendations listed in the above table are guides for the conditions stated. Other material, designs or dimensions affording equal or superior protection are also acceptable.

[Order 73-5, § 296-24-18009, filed 5/9/73 and Order 73-4, § 296-24-18009, filed 5/7/73.]

WAC 296-24-190 Mills and calenders in the rubber and plastics industries.

[Order 73-5, § 296-24-190, filed 5/9/73 and Order 73-4, § 296-24-190, filed 5/7/73.]

WAC 296-24-19001 Definitions. (1) "Bite" means the nip point between any two inrunning rolls.

(2) "Calender" means a machine equipped with two or more metal rolls revolving in opposite directions and used for continuously sheeting or plying up rubber and plastics compounds and for frictioning or coating materials with rubber and plastics compounds.

(3) "Mill" means a machine consisting of two adjacent metal rolls, set horizontally, which revolve in opposite directions (i.e. toward each other as viewed from above) used for the mechanical working of rubber and plastics compounds.

[Order 73-5, § 296-24-19001, filed 5/9/73 and Order 73-4, § 296-24-19001, filed 5/7/73.]

WAC 296-24-19003 General requirements. (1) New installations. All new installations after August 27, 1971, shall be in conformity with WAC 296-24-190 through 296-24-19015.

(2) Existing installations. All existing plant installations or equipment contracted for prior to the effective date of these standards, shall comply with WAC 296-24-190 through 296-24-19015.

(3) Auxiliary equipment. Mechanical and electrical equipment and auxiliaries shall be installed in accordance with this section and the state of Washington safety standards for installing electric wires and equipment, WAC 296-24-956 through 296-24-960.

(4) Mill roll heights. All new mill installations shall be installed so that the top of the operating rolls is not less than 50 inches above the level on which the operator stands, irrespective of the size of the mill. This distance shall apply to the actual working level, whether it be at the general floor level, in a pit, or on a platform.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-19003, filed 4/19/85; Order 76-6, § 296-24-19003, filed 3/1/76; Order 73-5, § 296-24-19003, filed 5/9/73 and Order 73-4, § 296-24-19003, filed 5/7/73.]

WAC 296-24-19005 Mill safety controls. (1) Safety trip control. A safety trip control shall be provided in front and in back of each mill. It shall be accessible and shall operate readily on contact. The safety trip control shall be one of the following types or a combination thereof.

(a) Pressure-sensitive body bars. Installed at front and back of each mill having a 46-inch roll height or over. These bars shall operate readily by pressure of the mill operator's body. Pressure-sensitive body bars should be installed on new equipment.

(b) Safety triprod. Installed in the front and in the back of each mill and located with 2 inches of a vertical plane tangent to the front and rear rolls. The top rods shall be not more than 72 inches above the level on which the operator stands. The triprods shall be accessible and shall operate readily whether the rods are pushed or pulled.

(c) Safety tripwire cable or wire center cord. Installed in the front and in the back of each mill and located within 2 inches of a vertical plane tangent to the front and rear rolls. The cables shall not be more than 72 inches above the level on which the operator stands. The tripwire cable or wire center cord shall operate readily whether cable or cord is pushed or pulled.

(2) Fixed guards. A fixed bar across the front and one across the back of the mill approximately 40 inches vertically above the working level and 20 inches horizontally from the crown face of the roll should be used where they are applicable.

(3) Auxiliary equipment. All auxiliary equipment such as mill divider, support bars, spray pipes, feed conveyors, strip knives, etc., shall be located in such a manner as to avoid interference with access to and operation of safety devices.

[Order 73-5, § 296-24-19005, filed 5/9/73 and Order 73-4, § 296-24-19005, filed 5/7/73.]

WAC 296-24-19007 Calender safety controls. (1) Safety trip, face. A-safety triprod, cable, or wire center cord shall be provided across each pair of in-running rolls extending the length of the face of the rolls. It shall be readily accessible and operate whether pushed or pulled. The safety tripping devices shall be located within reach of the operator and the bite.

(2) Safety trip, side. On both sides of the calender and near each end of the face of the roll, there shall be a cable or wire center cord connected to the safety trip. These lines should be not more than 12 inches from the faces of the respective rolls and not less than 2 inches from the calender frame. They should be anchored to the frame not more than 6 inches from the floor or operator's platform. They shall operate readily when pushed or pulled.

[Order 73-5, § 296-24-19007, filed 5/9/73 and Order 73-4, § 296-24-19007, filed 5/7/73.]

WAC 296-24-19009 Protection by location. (1) Mills. Where a mill is so installed that persons cannot normally reach through, over, under or around to come in contact with the roll bite or be caught between a roll and an adjacent object, then, provided such elements are made a fixed part of a mill, safety control devices listed in WAC 296-24-19005 shall not apply.

(2) Calenders. Where a calender is so installed that persons cannot normally reach through, over, under, or around to come in contact with the roll bite or be caught between a roll and an adjacent object, then, provided such elements are made a fixed part of a calender, safety control devices listed in WAC 296-24-19007 shall not apply.

[Order 73-5, § 296-24-19009, filed 5/9/73 and Order 73-4, § 296-24-19009, filed 5/7/73.]

WAC 296-24-19011 Trip and emergency switches. All trip and emergency switches shall not be of the automatically resetting type, but shall require manual resetting.

[Order 73-5, § 296-24-19011, filed 5/9/73 and Order 73-4, § 296-24-19011, filed 5/7/73.]

WAC 296-24-19013 Stopping limits. (1) Determination of distance of travel. All measurements on mills and calenders shall be taken with the rolls running empty at maximum operating speed. Stopping distances shall be expressed in inches of surface travel of the roll from the instant the emergency stopping device is actuated.

(2) Stopping limits for mills. All mills irrespective of the size of the rolls or their arrangement (individually or group-driven) shall be stopped within a distance, as measured in inches of surface travel, not greater than 1 1/2 percent of the peripheral no-load surface speeds of the respective rolls as determined in feet per minute.

(3) Stopping limits for calenders.

(a) All calenders, irrespective of size of the rolls or their configuration, shall be stopped within a distance, as measured in inches of surface travel, not greater than 1 3/4 percent of the peripheral no-load surface speeds of the respective calender rolls as determined in feet per minute.

(b) Where speeds above 250 feet per minute as measured on the surface of the drive roll are used, stopping distances of more than 1 3/4 percent are permissible. Such stopping distances shall be subject to engineering determination.

[Order 73-5, § 296-24-19013, filed 5/9/73 and Order 73-4, § 296-24-19013, filed 5/7/73.]

WAC 296-24-19015 Alarm. Where an exposure is created by the operation, and the operators are not within sight or hearing of other employees, a suitable alarm device should be provided so that assistance will be available in case of accidents.

[Order 73-5, § 296-24-19015, filed 5/9/73 and Order 73-4, § 296-24-19015, filed 5/7/73.]

WAC 296-24-195 Mechanical power presses.

[Order 76-6, § 296-24-195, filed 3/1/76; Order 73-5, § 296-24-195, filed 5/9/73 and Order 73-4, § 296-24-195, filed 5/7/73.]

WAC 296-24-19501 Definitions. (1) "Antirepeat" means the part of the clutch/brake control system designed to limit the press to a single stroke if the tripping means is held operated. Antirepeat requires release of all tripping mechanisms before another stroke can be initiated. "Antirepeat" is also called single stroke reset or reset circuit.

(2) "Brake" means the mechanism used on a mechanical power press to stop and/or hold the crankshaft, either directly or through a gear train, when the clutch is disengaged.

(3) "Bolster plate" means the plate attached to the top of the bed of the press having drilled holes or T-slots for attaching the lower die or die shoe.

(4) "Clutch" means the coupling mechanism used on a mechanical power press to couple the flywheel to the crankshaft, either directly or through a gear train.

(5) "Full revolution clutch" means a type of clutch that, when tripped, cannot be disengaged until the crankshaft has completed a full revolution and the press slide a full stroke.

(6) "Part revolution clutch" means a type of clutch that can be disengaged at any point before the crankshaft has completed a full revolution and the press slide a full stroke.

(7) "Direct drive" means the type of driving arrangement wherein no clutch is used; coupling and decoupling of the driving torque is accomplished by energization and deenergization of a motor. Even though not employing a clutch, direct drives match the operational characteristics of "part revolution clutches" because the driving power may be disengaged during the stroke of the press.

(8) "Concurrent" means acting in conjunction, and is used to describe a situation wherein two or more controls exist in an operated condition at the same time.

(9) "Continuous" means uninterrupted multiple strokes of the slide without intervening stops (or other clutch control action) at the end of individual strokes.

(10) "Counterbalance" means the mechanism that is used to balance or support the weight of the connecting rods, slide, and slide attachments.

(11) "Device" means a press control or attachment that:

(a) Restrains the operator from inadvertently reaching into the point of operation, or

(b) Prevents normal press operation if the operator's hands are inadvertently within the point of operation, or

(c) Automatically withdraws the operator's hands if the operator's hands are inadvertently within the point of operation as the dies close.

(12) "Presence sensing device" means a device designed, constructed and arranged to create a sensing field or area and deactivate the clutch control of the press when an operator's hand or any other parts of his body is within such field or area.

(13) "Gate or movable barrier device" means a movable barrier arranged to enclose the point of operation before the press stroke can be started.

(14) "Holdout or restraint device" means a mechanism, including attachments for operator's hands, that when anchored and adjusted prevent the operator's hands from entering the point of operation.

(15) "Pull–out device" means a mechanism attached to the operator's hands and connected to the upper die or slide of the press, that is designed, when properly adjusted, to withdraw the operator's hands as the dies close, if the operator's hands are inadvertently within the point of operation.

(16) "Sweep device" means a single or double arm (rod) attached to the upper die or slide of the press and designed to move the operator's hands to a safe position as the dies close, if the operator's hands are inadvertently within the point of operation.

(17) "Two hand control device" means a two hand trip that further requires concurrent pressure from both hands of the operator during a substantial part of the die–closing portion of the stroke of the press.

(18) "Die" means the tooling used in a press for cutting or forming material. An upper and a lower die make a complete set.

(19) "Die builder" means any person who builds dies for power presses.

(20) "Die set" means a tool holder held in alignment by guide posts and bushings and consisting of a lower shoe, an upper shoe or punch holder, and guide posts and bushings.

(21) "Die setter" means an individual who places or removes dies in or from mechanical power presses, and who, as a part of his duties, makes the necessary adjustments to cause the tooling to function properly and safely.

(22) "Die setting" means the process of placing or removing dies in or from a mechanical power press, and the process of adjusting the dies, other tooling and safeguarding means to cause them to function properly and safely.

(23) "Die shoe" means a plate or block upon which a die holder is mounted. A die shoe functions primarily as a base for the complete die assembly, and, when used, is bolted or clamped to the bolster plate or the face of slide.

(24) "Ejector" means a mechanism for removing work or material from between the dies.

(25) "Face of slide" means the bottom surface of the slide to which the punch or upper die is generally attached.

(26) "Feeding" means the process of placing or removing material within or from the point of operation.

(27) "Automatic feeding" means feeding wherein the material or part being processed is placed within or removed from the point of operation by a method or means not requiring action by an operator on each stroke of the press.

(28) "Semiautomatic feeding" means feeding wherein the material or part being processed is placed within or removed from the point of operation by an auxiliary means controlled by operator on each stroke of the press.

(29) "Manual feeding" means feeding wherein the material or part being processed is handled by the operator on each stroke of the press.

(30) "Foot control" means the foot operated control mechanism designed to be used with a clutch or clutch/brake control system.

(31) "Foot pedal" means the foot operated lever designed to operate the mechanical linkage that trips a full revolution clutch.

(32) "Guard" means a barrier that prevents entry of the operator's hands or fingers into the point of operation.

(33) "Die enclosure guard" means an enclosure attached to the die shoe or stripper, or both, in a fixed position.

(34) "Fixed barrier guard" means a die space barrier attached to the press frame.

(35) "Interlocked press barrier guard" means a barrier attached to the press frame and interlocked so that the press stroke cannot be started normally unless the guard itself, or its hinged or movable sections, enclose the point of operation.

(36) "Adjustable barrier guard" means a barrier requiring adjustment for each job or die setup.

(37) "Guide post" means the pin attached to the upper or lower die shoe, operating within the bushing on the opposing die shoe, to maintain the alignment of the upper and lower dies.

(38) "Hand feeding tool" means any hand held tool designed for placing or removing material or parts to be processed within or from the point of operation.

(39) "Inch" means an intermittent motion imparted to the slide (on machines using part revolution clutches) by momentary operation of the "inch" operating means. Operation of the "inch" operating means engages the driving clutch so that a small portion of one stroke or indefinite stroking can occur, depending upon the length of time the "inch" operating means is held operated. "Inch" is a function used by the die setter for setup of dies and tooling, but is not intended for use during production operations by the operator.

(40) "Jog" means an intermittent motion imparted to the slide by momentary operation of the drive motor, after the clutch is engaged with the flywheel at rest.

(41) "Knockout" means a mechanism for releasing material from either die.

(42) "Liftout" means the mechanism also known as knockout.

(43) "Operator's station" means the complete complement of controls used by or available to an operator on a given operation for stroking the press.

(44) "Pinch point" means any point other than the point of operation at which it is possible for a part of the body to be caught between the moving parts of a press or auxiliary equipment, or between moving and stationary parts of a press or auxiliary equipment or between the material and moving part or parts of the press or auxiliary equipment.

(45) "Point of operation" means the area of the press where material is actually positioned and work is being performed during any process such as shearing, punching, forming, or assembling.

(46) "Press" means a mechanically powered machine that shears, punches, forms or assembles metal or other material by means of cutting, shaping, or combination dies attached to slides. A press consists of a stationary bed or anvil, and a slide (or slides) having a controlled reciprocating motion toward and away from the bed surface, the slide being guided in a definite path by the frame of the press.

(47) "Repeat" means an unintended or unexpected successive stroke of the press resulting from a malfunction.

(48) "Safety block" means a prop that, when inserted between the upper and lower dies or between the bolster plate and the face of the slide, prevents the slide from falling of its own deadweight.

(49) "Single stroke" means one complete stroke of the slide, usually initiated from a full open (or up) position, followed by closing, (or down), and then a return to the full open position.

(50) "Single stroke mechanism" means an arrangement used on a full revolution clutch to limit the travel of the slide to one complete stroke at each engagement of the clutch.

(51) "Slide" means the main reciprocating press member. A slide is also called a ram, plunger, or platen.

(52) "Stop control" means an operator control designed to immediately deactivate the clutch control and activate the brake to stop slide motion.

(53) "Stripper" means a mechanism or die part for removing the parts or material from the punch.

(54) "Stroking selector" means the part of the clutch/brake control that determines the type of stroking when the operating means is actuated. The stroking selector generally includes positions for "off" (clutch control), "inch," "single stroke," and "continuous" (when continuous is furnished).

(55) "Trip or (tripping)" means activation of the clutch to "run" the press.

(56) "Turnover bar" means a bar used in die setting to manually turn the crankshaft of the press.

(57) "Two-hand trip" means a clutch actuating means requiring the concurrent use of both hands of the operator to trip the press.

(58) "Unitized tooling" means a type of die in which the upper and lower members are incorporated into a selfcontained unit so arranged as to hold the die members in alignment.

(59) "Control system" means sensors, manual input and mode selection elements, interlocking and decision-making circuitry, and output elements to the press operating mechanism.

(60) "Brake monitor" means a sensor designed, constructed, and arranged to monitor the effectiveness of the press braking system.

[Order 76-6, § 296-24-19501, filed 3/1/76; Order 73-5, § 296-24-19501, filed 5/9/73 and Order 73-4, § 296-24-19501, filed 5/7/73.]

WAC 296-24-19503 General requirements. (1) New installations. The requirements of this section shall apply to all mechanical power presses installed on or after August 31, 1971, except that the requirements of subsections 19505 (13), (14) and 19507(5) of WAC 296-24-195 shall be complied with by November 1, 1975.

(2) Former installations. The requirements of this section shall apply to all mechanical power presses installed prior to August 31, 1971, except that the requirements of section 19505 and 19507 of WAC 296-24-195 shall be complied with by November 1, 1975.

(3) All installations. The requirements of this section pertaining to the care and use of mechanical power presses shall apply to all mechanical power press operations as of February 15, 1972.

(4) Reconstruction and modification. It shall be the responsibility of any person reconstructing, or modifying a mechanical power press to do so in accordance with WAC 296-24-19505.

(5) Excluded machines. Press brakes, hydraulic and pneumatic power presses, bulldozers, hot bending and hot metal presses, forging presses and hammers, riveting machines and similar types of fastener applicators are excluded from the requirements of this section.

[Order 76-6, § 296-24-19503, filed 3/1/76; Order 73-5, § 296-24-19503, filed 5/9/73 and Order 73-4, § 296-24-19503, filed 5/7/73.]

WAC 296-24-19505 Mechanical power press guarding and construction, general. (1) Hazards to personnel associated with broken or falling machine components. Machine components shall be designed, secured, or covered to minimize hazards caused by breakage, or loosening and falling or release of mechanical energy (i.e. broken springs).

(2) Brakes. Friction brakes provided for stopping or holding a slide movement shall be inherently self-engaging by requiring power or force from an external source to cause disengagement; brake capacity shall be sufficient to stop the motion of the slide quickly and capable of holding the slide and its attachments at any point in its travel.

(3) Machines using full revolution positive clutches.

(a) Machines using full revolution clutches shall incorporate a single-stroke mechanism.

(b) If the single-stroke mechanism is dependent upon spring action, the spring(s) shall be of the compression type, operating on a rod or guided within a hole or tube, and designed to prevent interleaving of the spring coils in event of breakage.

(4) Foot pedals (treadle).

(a) The pedal mechanism shall be protected to prevent unintended operation from falling or moving objects or by accidental stepping onto the pedal.

(b) A pad with a nonslip contact area shall be firmly attached to the pedal.

(c) The pedal return spring(s) shall be of the compression type, operating on a rod or guided within a hole or tube, or designed to prevent interleaving of spring coils in event of breakage.

(d) If pedal counterweights are provided, the path of the travel of the weight shall be enclosed.

(5) Hand operated levers.

(a) Hand–lever–operated power presses shall be equipped with a spring latch on the operating lever to prevent premature or accidental tripping.

(b) The operating levers on hand–tripped presses having more than one operating station shall be interlocked to prevent the tripping of the press except by the "concurrent" use of all levers.

(6) Two–hand trip.

(a) A two–hand trip shall have the individual operator's hand controls protected against unintentional operation and have the individual operator's hand controls arranged by design and construction and/or separation to require the use of both hands to trip the press and use a control arrangement requiring concurrent operation of the individual operator's hand controls.

(b) Two–hand trip systems on full revolution clutch machines shall incorporate an antirepeat feature.

(c) If two–hand trip systems are used on multiple operator presses, each operator shall have a separate set of controls.

(7) Machines using part revolution clutches.

(a) The clutch shall release and the brake shall be applied when the external clutch engaging means is removed, deactivated, or deenergized.

(b) A red color stop control shall be provided with the clutch/brake control system. Momentary operation of the stop control shall immediately deactivate the clutch and apply the brake. The stop control shall override any other control, and reactuation of the clutch shall require use of the operating (tripping) means which has been selected.

(c) A means of selecting off, "inch" single stroke, and "continuous" (when the continuous function is furnished) shall be supplied with the clutch/brake control to select type of operation of the press. Fixing of selection shall be by means capable of supervision by the employer.

(d) The "inch" operating means shall be designed to prevent exposure of the workers hands within the point of operation by:

(i) Requiring the concurrent use of both hands to actuate the clutch, or

(ii) Being a single control protected against accidental actuation and so located that the worker cannot reach into the point of operation while operating the single control.

(e) Two–hand controls for single stroke shall conform to the following requirements:

(i) Each hand control shall be protected against unintended operation and arranged by design, construction, and/or separation so that the concurrent use of both hands is required to trip the press.

(ii) The control system shall be designed to permit an adjustment which will require concurrent pressure from both hands during the die closing portion of the stroke.

(iii) The control system shall incorporate an antirepeat feature.

(iv) The control system shall be designed to require release of all operator's hand controls before an interrupted stroke can be resumed. This requirement pertains only to those single stroke two–hand controls manufactured and installed on or after August 31, 1971.

(f) [Reserved.]

(g) Controls for more than one operating station shall be designed to be activated and deactivated in complete sets of two operator's hand controls per operating station by means capable of being supervised by the employer. The clutch/brake control system shall be designed and constructed to prevent actuation of the clutch if all operating stations are bypassed.

(h) Those clutch/brake control systems which contain both single and continuous functions shall be designed so that completion of continuous circuits may be supervised by the employer. The initiation of continuous run shall require a prior action or decision by the operator in addition to the selection of "continuous" on the stroking selector, before actuation of the operating means will result in continuous stroking.

(i) If foot control is provided, the selection method between hand and foot control shall be separate from the stroking selector and shall be designed so that the selection may be supervised by the employer.

(j) Foot operated tripping controls, if used, shall be protected so as to prevent operation from falling or moving objects, or from unintended operation by accidental stepping onto the foot control.

(k) The control of air–clutch machines shall be designed to prevent a significant increase in the normal stopping time due to failure within the operating valve mechanism, and to inhibit further operation if such failure does occur. These requirements shall apply only to those clutch/brake air–valve controls manufactured and installed on or after August 31, 1971, but shall not apply to machines intended only for continuous automatic feeding applications.

(l) The clutch/brake control shall incorporate an automatic means to prevent initiation or continued activation of the single stroke or continuous functions unless the press drive motor is energized and in the forward direction.

(m) The clutch/brake control shall automatically deactivate in event of failure of the power or pressure supply for the clutch engaging means. Reactivation of clutch shall require restoration of normal supply and the use of the tripping mechanism(s).

(n) The clutch/brake control shall automatically deactivate in event of failure of the counterbalance(s) air supply. Reactivation of the clutch shall require restoration of normal air supply and use of the tripping mechanism(s).

(o) Selection of bar operation shall be by means capable of being supervised by the employer. A separate pushbutton shall be employed to activate the clutch, and the clutch shall be activated only if the driver motor is deenergized.

(8) Electrical.

(a) A main power disconnect switch capable of being locked only in the Off position shall be provided with every power press control system.

(b) The motor start button shall be protected against accidental operation.

(c) All mechanical power press controls shall incorporate a type of drive motor starter that will disconnect the drive motor from the power source in event of control voltage or power source failure, and require operation of the motor start button to restart the motor when voltage conditions are restored to normal.

(d) All a.c. control circuits and solenoid valve coils shall be powered by not more than a nominal 120-volt a.c. supply obtained from a transformer with an isolated secondary. Higher voltages that may be necessary for operation of machine or control mechanisms shall be isolated from any control mechanism handled by the operator, but motor starters with integral start-stop buttons may utilize line voltage cont. All d.c. control circuits shall be powered by not more than nominal 240-volt d.c. supply isolated from any higher voltages.

(e) All clutch/brake control electrical circuits shall be protected against the possibility of an accidental ground in the control circuit causing false operation of the press.

(f) Electrical clutch/brake control circuits shall incorporate features to minimize the possibility of an unintended stroke in event of the failure of a control component to function properly, including relays, limit switches, and static output circuits.

(9) Slide counterbalance systems.

(a) Spring counterbalance systems when used shall incorporate means to retain system parts in event of breakage.

(b) Spring counterbalances when used shall have the capability to hold the slide and its attachments at mid-stroke, without brake applied.

(c) Air counterbalance cylinders shall incorporate means to retain the piston and rod in case of breakage or loosening.

(d) Air counterbalance cylinders shall have adequate capability to hold the slide and its attachments at any point in stroke, without brake applied.

(e) Air counterbalance cylinders shall incorporate means to prevent failure of capability (sudden loss of pressure) in event of air supply failure.

(10) Air controlling equipment. Air controlling equipment shall be protected against foreign material and water entering the pneumatic system of the press. A means of air lubrication shall be provided when needed.

(11) Hydraulic equipment. The maximum anticipated working pressures in any hydraulic system on a mechanical power press shall not exceed the safe working pressure rating of any component used in that system.

(12) Pressure vessels. All pressure vessels used in conjunction with power presses shall conform to the American Society of Mechanical Engineers Code for Pressure Vessels, 1968 Edition.

(13) Control reliability. When required by subsection 19507(5) of WAC 296-24-195, the control system shall be constructed so that a failure within the system does not prevent the normal stopping action from being applied to the press when required, but does prevent initiation of a successive stroke until the failure is corrected. The failure shall be detectable by a simple test, or indicated by the control system. This requirement does not apply to those elements of the control system which have no effect on the protection against point of operation injuries.

(14) Brake system monitoring. When required by subsection 19507(5) of WAC 296-24-195, the brake monitor shall meet the following requirements:

(a) Be so constructed as to automatically prevent the activation of a successive stroke if the stopping time or braking distance deteriorates to a point where the safety distance being utilized does not meet the requirements set forth in item 19507 (3)(c)(v) or 19507 (3)(g)(iii) of this section. The brake monitor used with the Type B gate or movable barrier device shall be installed in a manner to detect slide top-stop overrun beyond the normal limit reasonably established by the employer.

(b) Be installed on a press such that it indicates when the performance of the braking system has deteriorated to the extent described in subdivision 19505 (14)(a) of this section; and

(c) Be constructed and installed in a manner to monitor brake system performance on each stroke.

[Order 76-6, § 296-24-19505, filed 3/1/76; Order 74-27, § 296-24-19505, filed 5/7/74; Order 73-5, § 296-24-19505, filed 5/9/73 and Order 73-4, § 296-24-19505, filed 5/7/73.]

WAC 296-24-19507 Safeguarding the point of operation. (1) General requirements. (a) It shall be the responsibility of the employer to provide and insure the usage of "point of operation guards" or properly applied and adjusted point of operation devices on every operation performed on a mechanical power press. See Table O-10.

(b) The requirement of subdivision (a) of this section shall not apply when the point of operation opening is one-fourth inch or less. See Table O-10.

TABLE O-10

MAXIMUM OPENINGS UNDER GUARDS

Distance of Opening From Point of Operation Hazard (Inches)	Maximum Openings Under Guard (Inches)
1/2 to 1-1/2	1/4
1-1/2 to 2-1/2	3/8
2-1/2 to 3-1/2	1/2
3-1/2 to 5-1/2	5/8
5-1/2 to 6-1/2	3/4
6-1/2 to 7-1/2	7/8
7-1/2 to 12-1/2	1-1/4
12-1/2 to 15-1/2	1-1/2
15-1/2 to 17-1/2	1-7/8
17-1/2 to 31-1/2	2-1/8

MAXIMUM OPENINGS THROUGH GUARDS

Material	Guard Clearance From Hazard Point	Largest Mesh or Opening (Inches)
Woven Wire, Expanded Metal or Perforated Metal	From 2 to 4	1/2
	4 to 15	2
Wood or Metal Strips (Crossed)	From 2 to 4	3/8
	4 to 15	2
Wood or metal Strips (Not Crossed)	From 2 to 4	1/2 width of strip
	4 to 15	1 width of strip

Note: The specifications for the materials used for filling barrier, point of operation guards is contained in Table O–12, WAC 296–24–20531. When plastic is used as filling, it shall be 1/4 inch thick (minimum).

(2) Point of operation guards.

(a) Every point of operation guard shall meet the following design, construction, application and adjustment requirements:

(i) It shall prevent entry of hands or fingers into the point of operation by reaching through, over, under or around the guard;

(ii) It shall conform to the maximum permissible openings of Table O–10;

(iii) It shall, in itself, create no pinch point between the guard and moving machine parts;

(iv) It shall utilize fasteners not readily removable by operator, so as to minimize the possibility of misuse or removal of essential parts;

(v) It shall facilitate its inspection, and

(vi) It shall offer maximum visibility of the point of operation consistent with other requirements.

(b) A die enclosure guard shall be attached to the die shoe or stripper in a fixed position.

(c) A fixed barrier guard shall be attached securely to the frame of the pressor to the bolster plate.

(d) An interlocked press barrier guard shall be attached to the press frame or bolster and shall be interlocked with the press clutch control so that the clutch cannot be activated unless the guard itself, or the hinged or movable sections of the guard are in position to conform to the requirements of Table O–10.

(e) The hinged or movable sections of an interlocked press barrier guard shall not be used for manual feeding. The guard shall prevent opening of the interlocked section and reaching into the point of operation prior to die closure or prior to the cessation of slide motion. See subdivision 19507 (3)(b) of this section regarding manual feeding through interlocked press barrier devices.

(f) The adjustable barrier guard shall be securely attached to the press bed, bolster plate, or die shoe, and shall be adjusted and operated in conformity with Table O–10 and the requirements of this subsection. Adjustments shall be made only by authorized personnel whose qualifications include a knowledge of the provisions of Table O–10 and this subsection.

(g) A point of operation enclosure which does not meet the requirements of this subsection and Table 0–10 shall be used only in conjunction with point of operation devices.

(3) Point of operation devices.

(a) Point of operation devices shall protect the operator by:

(i) Preventing and/or stopping normal stroking of the press if the operator's hands are inadvertently placed in the point of operation; or

(ii) Preventing the operator from inadvertently reaching into the point of operation or withdrawing his/her hands if they are inadvertently located in the point of operation, as the dies close; or

(iii) Preventing the operator from inadvertently reaching into the point of operation at all times; or

(iv) [Reserved.]

(v) Requiring application of both of the operator's hands to machine operating controls and locating such controls at such a safety distance from the point of operation that the slide completes the downward travel or stops before the operator can reach into the point of operation with his/her hands; or

(vi) Enclosing the point of operation before a press stroke can be initiated and maintaining this closed condition until the motion of the slide had ceased; or

(vii) Enclosing the point of operation before a press stroke can be initiated, so as to prevent an operator from reaching into the point of operation prior to die closure or prior to cessation of slide motion during the downward stroke.

(b) The gate or movable barrier device shall protect the operator as follows:

(i) A Type A gate or movable barrier device shall protect the operator in the manner specified in item (a)(vi) of this subsection.

(ii) A Type B gate or movable barrier device shall protect the operator in the manner specified in item (a)(vii) of this subsection.

(c) A presence sensing point of operation device shall protect the operator as provided in item (a)(i) of this subsection, and shall be interlocked into the control circuit to prevent or stop slide motion if the operator's hand or other part of his/her body is within the sensing field of the device during the downstroke of the press slide.

(i) The device may not be used on machines using full revolution clutches.

(ii) The device may not be used as a tripping means to initiate slide motion.

(iii) The device shall be constructed so that a failure within the system does not prevent the normal stopping action from being applied to the press when required,

but does prevent the initiation of a successive stroke until the failure is corrected. The failure shall be indicated by the system.

(iv) Muting (bypassing of the protective function) of such device, during the upstroke of the press slide, is permitted for the purpose of parts ejection, circuit checking, and feeding.

(v) The safety distance (Ds) from the sensing field to the point of operation shall be greater than the distance determined by the following formula:

Ds = 63 inches/second x Ts where:
Ds = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Ts = stopping time of the press measured at approximately 90° position of crankshaft rotation (seconds).

(vi) Guards shall be used to protect all areas of entry to the point of operation not protected by the presence sensing device.

(d) The pull–out device shall protect the operator as specified in item 19507 (3)(a)(ii) of this section and shall include attachments for each of the operator's hands.

(i) Attachments shall be connected to and operated only by the press slide or upper die.

(ii) Attachment shall be adjusted to prevent the operator from reaching into the point of operation or to withdraw the operator's hands from the point of operation before the dies close.

(iii) A separate pull–out device shall be provided for each operator if more than one operator is used on a press.

(iv) Each pull–out device in use shall be visually inspected and checked for proper adjustment at the start of each operator shift, following a new die set–up, and when operators are changed. Necessary maintenance or repair or both shall be performed and completed before the press is operated. Records of inspections and maintenance shall be kept in accordance with WAC 296–24–19511.

(e) The sweep device, shall protect the operator as specified in item 19507 (3)(a)(ii) of this section, by removing his/her hands safely to a safe position if they are inadvertently located in the point of operation, as the dies close or prior to tripping the clutch. Devices operating in this manner shall have a barrier, attached to the sweep arm in such a manner as to prevent the operator from reaching into the point of operation, past the trailing edge of the sweep arm on the downward stroke of the press. This device may not be used for point of operation safeguarding after December 31, 1976.

(i) The sweep device must be activated by the slide or by motion of a foot pedal triprod.

(ii) The sweep device must be designed, installed and operated so as to prevent the operator from reaching into the point of operation before the dies close.

(iii) The sweep device must be installed so that it will not itself create an impact or shear hazard between the sweep arm and the press tie rods, dies, or any other part of the press or barrier.

(iv) Partial enclosure conforming with this subdivision 19507 (3)(e), as to the area of entry which they protect, must be provided on both sides of the point of operation to prevent the operator from reaching around or behind the sweep device and into the point of operation after the dies start to close. Partial enclosures shall not themselves create a pinch point or shear hazard.

(f) A holdout or a restraint device shall protect the operator as specified in item (3)(a)(iii) of this section and shall include attachments for each of the operator's hands. Such attachments shall be securely anchored and adjusted in such a way that the operator is restrained from reaching into the point of operation. A separate set of restraints shall be provided for each operator if more than one operator is required on a press.

(g) The two hand control device shall protect the operator as specified in item 19507 (3)(a)(v) of this section.

(i) When used in press operations requiring more than one operator, separate two hand controls shall be provided for each operator, and shall be designed to require concurrent application of all operators' controls to activate the slide. The removal of a hand from any control button shall cause the slide to stop.

(ii) Each two hand control shall meet the construction requirements of subdivision 19505 (7)(e) of this section.

(iii) The safety distance (Ds) between each two hand control device and the point of operation shall be greater than the distance determined by the following formula:

Ds = 63 inches/second x Ts, where:
Ds = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Ts = stopping time of the press measured at approximately 90° position of crankshaft rotation (seconds).

(iv) Two hand control shall be fixed in position so that only a supervisor or safety engineer is capable of relocating the controls.

(h) The two hand trip device shall protect the operator as specified in item 19507 (3)(a)(v) of this section.

(i) When used in press operations requiring more than one operator, separate two hand trips shall be provided for each operator, and shall be designed to require concurrent application of all operators' controls to activate the slide.

(ii) Each two hand trip shall meet the construction requirements of subsection 19505(6) of this section.

(iii) The safety distance (Dm) between the two hand trip and the point of operation shall be greater than the distance determined by the following formula:

Dm = 63 inches/second x Tm; where:
Dm = minimum safety distance (inches);
63 inches/second = hand speed constant; and
Tm = the maximum time the press takes for the die closure after it has been tripped (seconds). For full revolution clutch presses with only one engaging point Tm is equal to the time necessary for one and one–half revolutions of the crankshaft. For full revolution clutch presses with more than one engaging point, Tm shall be calculated as follows:

$$Tm = \left\{ \frac{1}{2} + \frac{1}{\text{Number of engaging points per revolution}} \right\} \times \text{time necessary to complete one revolution of the crankshaft (seconds)}$$

(iv) Two hand trips shall be fixed in position so that only a supervisor or safety engineer is capable of relocating the controls.

(i) [Reserved.]

(4) Hand feeding tools. Hand feeding tools are intended for placing and removing materials in and from the press. Hand feeding tools are not a point of operation guard or protection device and shall not be used in lieu of the "guards" or devices required in this section.

(5) Additional requirements for safeguarding. Where the operator feeds or removes parts by placing one or both hands in the point of operation, and a two hand control, presence sensing device of Type B gate or movable barrier (on a part revolution clutch) is used for safeguarding:

(i) The employer shall use a control system and a brake monitor which comply with subsections 19505 (13) and (14) of this section. This requirement shall be complied with by November 1, 1975;

(ii) The exception in item 19505 (7)(e)(iv) of this section for two hand controls manufactured and installed before August 31, 1971, is not applicable under this subsection 19507(5);

(iii) The control of air clutch machines shall be designed to prevent a significant increase in the normal stopping time due to a failure within the operating valve mechanism, and to inhibit further operation if such failure does occur, where a part revolution clutch is employed. The exception in subdivision 19505 (7)(k) of this section for controls manufactured and installed before August 31, 1971, is not applicable under this subsection 19507(5).

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-19507, filed 11/13/80; Order 76-6, § 296-24-19507, filed 3/1/76; Order 73-5, § 296-24-19507, filed 5/9/73 and Order 73-4, § 296-24-19507, filed 5/7/73.]

WAC 296-24-19509 Design, construction, setting and feeding of dies. (1) General requirements. Effective February 1, 1975, the employer shall:

(a) Use dies and operating methods designed to control or eliminate hazards to operating personnel, and

(b) Furnish and enforce the use of hand tools for freeing and removing stuck work or scrap pieces from the die, so that no employee need reach into the point of operation for such purposes.

(2) [Reserved.]

(3) Scrap handling. The employer shall provide means for handling scrap from roll feed or random length stock operations. Scrap cutters used in conjunction with scrap handling systems shall be safeguarded in accordance with WAC 296-24-19507 and 296-24-205, mechanical power-transmission apparatus.

(4) Guide post hazard. The hazard created by a guide post (when it is located in the immediate vicinity of the operator) when separated from its bushing by more than one-fourth inch shall be considered as a point of operation hazard and be protected in accordance with WAC 296-24-19507.

(5) Unitized tooling. If unitized tooling is used, the opening between the top of the punch holder and the face of the slide, or striking pad, shall be safeguarded in accordance with the requirements of WAC 296-24-19507.

(6) Tonnage, stroke and weight designation. All dies shall be:

(a) Stamped with the tonnage and stroke requirements, or have these characteristics recorded if these records are readily available to the die setter;

(b) Stamped to indicate upper die weight when necessary for air counterbalance pressure adjustment; and

(c) Stamped to indicate complete die weight when handling equipment may become overloaded.

(7) Die fastening. Provision shall be made in both the upper and lower shoes for securely mounting the die to the bolster and slide. Where clamp caps or setscrews are used in conjunction with punch stems, additional means of securing the upper shoe to the slide shall be used.

(8) Die handling. Handling equipment attach points shall be provided on all dies requiring mechanical handling.

(9) Diesetting.

(a) The employer shall establish a diesetting procedure that will insure compliance with WAC 296-24-19507.

(b) The employer shall provide spring loaded turnover bars, for presses designed to accept such turnover bars.

(c) The employer shall provide die stops or other means to prevent losing control of the die while setting or removing dies in presses which are inclined.

(d) The employer shall provide and enforce the use of safety blocks for use whenever dies are being adjusted or repaired in the press.

(e) The employer shall provide brushes, swabs, lubricating rolls and automatic or manual pressure guns so that operators and diesetters shall not be required to reach into the point of operation or other hazard areas to lubricate material, punches or dies.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-19509, filed 12/24/81; Order 76-6, § 296-24-19509, filed 3/1/76; Order 73-5, § 296-24-19509, filed 5/9/73 and Order 73-4, § 296-24-19509, filed 5/7/73.]

WAC 296-24-19511 Inspection, maintenance and modification of presses. (1) Inspection and maintenance records. (a) It shall be the responsibility of the employer to establish and follow a program of periodic and regular inspections of his power presses to insure that all their parts, auxiliary equipment and safeguards are in a safe operating condition and adjustment. The employer shall maintain records of these inspections and the maintenance work performed.

(b) Each press shall be inspected and tested no less than weekly to determine the condition of the clutch/brake mechanism, anti-repeat feature and single stroke mechanism. Necessary maintenance or repair or both shall be performed and completed before the press is operated. The employer shall maintain records of these inspections and the maintenance work performed. These requirements do not apply to those presses which comply with subsections 19505 (13) and (14).

(2) Modification. It shall be the responsibility of any person modifying a power press to furnish instructions with the modification to establish new or changed guidelines for use and care of the power press so modified.

(3) Training of maintenance personnel. It shall be the responsibility of the employer to insure the original and continuing competence of personnel caring for, inspecting and maintaining power presses.

[Order 76-6, § 296-24-19511, filed 3/1/76; Order 73-5, § 296-24-19511, filed 5/9/73 and Order 73-4, § 296-24-19511, filed 5/7/73.]

WAC 296-24-19513 Operation of power presses. (1) Employment of minors. The employer shall permit no one under 18 years of age to operate or assist in the operation of machinery covered in this section, except that this section shall not be deemed to prohibit the employment of persons who are 16 or 17 years of age in an apprenticeship training program which meets the requirements contained in chapter 49.04 RCW, apprenticeship.

(2) Instruction to operators. The employer shall train and instruct the operator in the safe method of work before starting work on any operation covered by this section. The employer shall insure by adequate supervision that correct operating procedures are being followed.

(3) Work area. The employer shall provide clearance between machines so that movement of one operator will not interfere with the work of another. Ample room for cleaning machines, handling material, work pieces, and scrap shall also be provided. All surrounding floors shall be kept in good condition and free from obstructions, grease, oil and water.

(4) Overloading. The employer shall operate his presses within the tonnage and attachment weight ratings specified by the manufacturer.

[Order 76-6, § 296-24-19513, filed 3/1/76; Order 73-5, § 296-24-19513, filed 5/9/73 and Order 73-4, § 296-24-19513, filed 5/7/73.]

WAC 296-24-19515 Reports of point of operation injuries--Mechanical power presses. The employer shall report some types of accidents associated with mechanical power presses. Such accidents shall include those that involve injuries to body parts caught in the point of operation or other pinch points on power presses and those that involve malfunction of safeguards or actuating controls but do not cause injury. Such report shall not in itself incite citations and shall be used for statistical purposes only. The report shall be sent to the Chief of Research and Statistics, Division of Industrial Safety and Health, Department of Labor and Industries, P.O. Box 207, Olympia, Washington 98504. The following information shall be included in the report:

(1) Employer's name, address and location of the workplace (establishment).

(2) Employee's name, injury sustained, and the task being performed (operation, setup, maintenance or other).

(3) Type of clutch used on the press (full revolution, part revolution, or direct drive).

(4) Type of safeguard(s) being used (two hand control, two hand trip, pull-outs, sweeps or other). If the safeguard is not described in this section, give a complete description.

(5) Cause of the accident (repeat of press, safeguard failure, removing stuck part or scrap, no safeguard provided, no safeguard in use, or other).

(6) Type of feeding (manual with hands in dies or with hands out of dies, semiautomatic, automatic, or other).

(7) Means used to actuate press stroke (foot trip, foot control, hand trip, hand control, or other).

(8) Number of operators required for the operation and the number of operators provided with controls and safeguards.

[Order 76-6, § 296-24-19515, filed 3/1/76.]

WAC 296-24-197 Compactors. General requirements. An antirepeat device shall be installed on compactors which will prohibit the compacting of material while the gate or door is raised or open. When adjustments or clearing of jams are necessary, means shall be provided for locking out the control energy.

[Order 74-27, § 296-24-197, filed 5/7/74.]

WAC 296-24-200 Forging machines.

[Order 73-5, § 296-24-200, filed 5/9/73 and Order 73-4, § 296-24-200, filed 5/7/73.]

WAC 296-24-20001 Definitions. (1) "Forging" means the product of work on metal formed to a desired shape by impact or pressure in hammers, forging machines (upsetters), presses, rolls, and related forming equipment. Forging hammers, counterblow equipment and high-energy-rate forging machines impart impact to the workpiece, while most other types of forging equipment impart squeeze pressure in shaping the stock. Some metals can be forged at room temperature, but the majority of metals are made more plastic for forging by heating.

(2) "Open framehammers (or blacksmith hammers)" mean hammers used primarily for the shaping of forgings by means of impact with flat dies. Open frame hammers generally are so constructed that the anvil assembly is separate form the operating mechanism and machine supports; it rests on its own independent foundation. Certain exceptions are forging hammers made with frame mounted on the anvil, e.g., the smaller, single-frame hammers are usually made with the anvil and frame in one piece.

(3) "Steam hammers" mean a type of drop hammer where the ram is raised for each stroke by a double-action steam cylinder and the energy delivered to the workpiece is supplied by the velocity and weight of the ram and attached upper die driven downward by steam pressure. Energy delivered during each stroke may be varied.

(4) "Gravity hammers" mean a class of forging hammer wherein energy for forging is obtained by the mass

and velocity of a freely falling ram and the attached upper die. Examples: Board hammers and air-lift hammers.

(5) "Forging presses" mean a class of forging equipment wherein the shaping of metal between dies is performed by mechanical or hydraulic pressure, and usually is accomplished with a single workstroke of the press for each die station.

(6) "Trimming presses" mean a class of auxiliary forging equipment which removes flash or excess metal from a forging. This trimming operation can also be done cold, as can coining, a product sizing operation.

(7) "High-energy-rate forging machines" mean a class of forging equipment wherein high ram velocities resulting from the sudden release of a compressed gas against a free piston impart impact to the workpiece.

(8) "Forging rolls" mean a class of auxiliary forging equipment wherein stock is shaped between power driven rolls bearing contoured dies. Usually used for preforming, roll forging is often employed to reduce thickness and increase length of stock.

(9) "Ring rolls" mean a class for forging equipment used for shaping weldless rings from pierced discs or thick-walled, ring-shaped blanks between rolls which control wall thickness, ring diameter, height and contour.

(10) "Bolt-headers" mean the same as an upsetter or forging machine except that the diameter of stock fed into the machine is much smaller, i.e., commonly three-fourths inch or less.

(11) "Rivet making machines" mean the same as upsetters and bolt-headers when producing rivets with stock diameter of 1-inch or more. Rivet making with less than 1-inch diameter is usually a cold forging operation, and therefore not included in WAC 296-24-200 through 296-24-20021.

(12) "Upsetters (or forging machines, or headers)" means a type of forging equipment, related to the mechanical press, in which the main forming energy is applied horizontally to the workpiece which is gripped and held by prior action of the dies.

[Order 73-5, § 296-24-20001, filed 5/9/73 and Order 73-4, § 296-24-20001, filed 5/7/73.]

WAC 296-24-20003 General requirements. (1) Use of lead. The safety requirements of this section apply to lead casts or other use of lead in the forge shop or die shop.

(a) Thermostatic control of heating elements shall be provided to maintain proper melting temperature and prevent overheating.

(b) Fixed or permanent lead pot installations shall be exhausted.

(c) Portable units shall be used only in areas where good, general room ventilation is provided as specified in the general occupational health standards, chapter 296-62 WAC.

(d) Personal protective equipment (gloves, goggles, aprons, and other items) shall be worn.

(e) A covered container shall be provided to store dross skimmings.

(f) Equipment shall be kept clean, particularly from accumulations of yellow lead oxide.

(2) Inspection and maintenance. It shall be the responsibility of the employer to maintain all forge shop equipment in a condition which will insure continued safe operation. This responsibility includes:

(a) Establishing periodic and regular maintenance safety checks and keeping records of these inspections.

(b) Scheduling and recording inspection of guards and point of operation protection devices at frequent and regular intervals.

(c) Training personnel for the proper inspection and maintenance of forging machinery and equipment.

(d) All overhead parts shall be fastened or protected in such a manner that they will not fly off or fall in event of failure.

(3) Hammers and presses.

(a) All hammers shall be positioned or installed in such a manner that they remain on or are anchored to foundations sufficient to support them.

(b) All presses shall be installed in such a manner that they remain where they are positioned or they are anchored to foundations sufficient to support them.

(c) Means shall be provided for disconnecting the power to the machine and for locking out or rendering cycling controls inoperable.

(d) The ram shall be blocked when dies are being changed or other work is being done on the hammer. Blocks or wedges shall be made of material the strength and construction of which should meet or exceed the specifications and dimensions shown in Table O-11.

(e) Tongs shall be of sufficient length to clear the body of the worker in case of kickback, and shall not have sharp handle ends. The worker should be instructed in the proper body position when using tongs. Tongs should be checked periodically to see that they remain at the proper hardness level for the job. When rings or equivalent devices for locking tongs are used they should be inspected periodically to insure safe condition.

(f) Oil swabs, or scale removers, or other devices to remove scale shall be provided. These devices shall be long enough to enable a man to reach the full length of the die without placing his hand or arm between the dies.

(g) Material handling equipment shall be of adequate strength, size, and dimension to handle diesetting operations safely.

(h) A scale guard of substantial construction shall be provided at the back of every hammer, so arranged as to stop flying scale.

(i) A scale guard of substantial construction shall be provided at the back of every press, so arranged as to stop flying scale.

[Order 76-6, § 296-24-20003, filed 3/1/76; Order 73-5, § 296-24-20003, filed 5/9/73 and Order 73-4, § 296-24-20003, filed 5/7/73.]

WAC 296-24-20005 Hammers, general. (1) Keys. Die keys and shims shall be made from a grade of material that will not unduly crack or splinter, and should not project more than 2 inches in front and 4 inches in back of ram or die.

(2) Foot operated devices. All foot operated devices (i.e., treadles, pedals, bars, valves, and switches) shall be substantially and effectively protected from unintended operation.

[Order 73-5, § 296-24-20005, filed 5/9/73 and Order 73-4, § 296-24-20005, filed 5/7/73.]

WAC 296-24-20007 Presses. All manually operated valves and switches shall be clearly identified and readily accessible.

[Order 73-5, § 296-24-20007, filed 5/9/73 and Order 73-4, § 296-24-20007, filed 5/7/73.]

WAC 296-24-20009 Power-driven hammers. (1) Safety cylinder head. Every steam or airhammer shall have a safety cylinder head to act as a cushion if the rod should break or pull out of the ram.

(2) Shutoff valve. Steam hammers shall be provided with a quick closing emergency valve in the admission pipeline at a convenient location. This valve shall be closed and locked in the off position while the hammer is being adjusted, repaired, or serviced, or when the dies are being changed.

(3) Cylinder draining. Steam hammers shall be provided with a means of cylinder draining, such as a self-draining arrangement or a quick-acting drain cock.

(4) Pressure pipes. Steam or air piping shall conform to the specifications of American National Standard ANSI B31.1.0-1967, Power Piping with Addenda, ANSI B31.1.06-1971.

[Order 73-5, § 296-24-20009, filed 5/9/73 and Order 73-4, § 296-24-20009, filed 5/7/73.]

WAC 296-24-20011 Gravity hammers. (1) Air-lift hammers.

(a) Airlift hammers shall have a safety cylinder head as required in WAC 296-24-20009(1).

(b) Air-lift hammers shall have an air shutoff valve as required in WAC 296-24-20009(2) and should be conveniently located and distinctly marked for ease of identification.

(c) Air-lift hammers shall be provided with two drain cocks: one on main head cylinder, and one on clamp cylinder.

(d) Air piping shall conform to the specifications of the ANSI B31.1.0-1967, Power Piping with Addenda, ANSI B.31.1.06-1971.

(2) Board drophammers.

(a) A suitable enclosure shall be provided to prevent damaged or detached boards from falling. The board enclosure shall be securely fastened to the hammer.

(b) All major assemblies and fittings which can loosen and fall shall be properly secured in place.

[Order 73-5, § 296-24-20011, filed 5/9/73 and Order 73-4, § 296-24-20011, filed 5/7/73.]

WAC 296-24-20013 Forging presses. (1) Mechanical forging presses. When dies are being changed or maintenance is being performed on the press, the following shall be accomplished:

(a) The power to the press shall be locked out.

(b) The flywheel shall be at rest.

(c) The ram shall be blocked with a material the strength of which shall meet or exceed the specifications or dimensions shown in Table O-11

(2) Hydraulic forging presses. When dies are being changed or maintenance is being performed on the press, the following shall be accomplished:

(a) The hydraulic pumps and power apparatus shall be locked out.

(b) The ram shall be blocked with a material the strength of which shall meet or exceed the specifications or dimensions shown in Table O-11.

[Order 73-5, § 296-24-20013, filed 5/9/73 and Order 73-4, § 296-24-20013, filed 5/7/73.]

WAC 296-24-20015 Trimming presses. (1) Hot trimming presses. The requirements of WAC 296-24-20013(1) shall also apply to hot trimming presses.

(2) Cold trimming presses. Cold trimming presses shall be safeguarded in accordance with WAC 296-24-195 through 296-24-19507.

[Order 73-5, § 296-24-20015, filed 5/9/73 and Order 73-4, § 296-24-20015, filed 5/7/73.]

WAC 296-24-20017 Upsetters. (1) General requirements. All upsetters shall be installed so that they remain on their supporting foundations.

(2) Lockouts. Upsetters shall be provided with a means for locking out the power at its entry point to the machine and rendering its cycling controls inoperable.

(3) Manually operated controls. All manually operated valves and switches shall be clearly identified and readily accessible.

(4) Tongs. Tongs shall be of sufficient length to clear the body of the worker in case of kickback, and shall not have sharp handle ends. The worker should be instructed in the proper body position when using tongs. Tongs should be checked periodically to see that they remain at the proper hardness level for the job. When rings or equivalent devices for locking tongs are used they should be inspected periodically to assure safe condition.

(5) Changing dies. When dies are being changed, maintenance performed, or any work done on the machine, the power to the upsetter shall be locked out, and the flywheel shall be at rest.

[Order 73-5, § 296-24-20017, filed 5/9/73 and Order 73-4, § 296-24-20017, filed 5/7/73.]

WAC 296-24-20019 Other forging equipment. (1) Boltheading. The provisions of WAC 296-24-20017 shall apply to boltheading.

(2) Rivet making. The provisions of WAC 296-24-20017 shall apply to rivet making.

[Order 73-5, § 296-24-20019, filed 5/9/73 and Order 73-4, § 296-24-20019, filed 5/7/73.]

WAC 296-24-20021 Other forge facility equipment. (1) Billet shears. A positive-type lockout device for disconnecting the power to the shear shall be provided.

(2) Saws. Every saw shall be provided with a guard of not less than one-eighth inch sheet metal positioned to

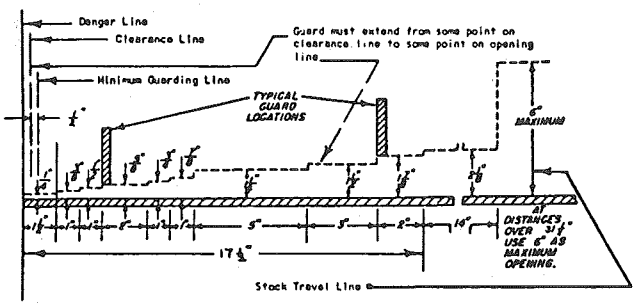
stop flying sparks. Suitable means should be provided to trap sparks below the saw. A tank of water placed below the saw is also desirable.

(3) Conveyors. Conveyor power transmission equipment shall be guarded in accordance with ANSI B20.1–1957, Safety Code for Conveyors, Cableways, and Related Equipment.

(4) Shot blast. The cleaning chamber shall have doors or guards to protect operators.

(5) Grinding. Personal protective equipment shall be used in grinding operations, and equipment shall be used and maintained in accordance with ANSI B7.1–1970, Safety Code for the Use, Care, and Protection of Abrasive Wheels, and with WAC 296–24–180 through 296–24–18009.

This table shows the distances that guards shall be positioned from the danger line in accordance with the required openings.



Explanation of above diagram:

This diagram shows the accepted safe openings between the bottom edge of a guard and feed table at various distances from the danger line (point of operation).

The "clearance line" marks the distance required to prevent contact between guard and moving parts.

The "minimum guarding line" is the distance between the infeed side of the guard and the danger line which is one–half inch from the danger line.

The various openings are such that for average size hands an operator's fingers won't reach the point of operation.

After installation of point of operation guards and before a job is released for operation a check should be made to verify that the guard will prevent the operator's hands from reaching the point of operation.

TABLE O–11

STRENGTH AND DIMENSIONS FOR WOOD RAM PROPS

Size of timber inches[1]	Square inches in cross section	Minimum allowable crushing strength parallel to grain, p.s.i.[2]	Maximum static load within short column range[3]	Safety factor	Maximum recommended weight of forging hammer for timber used	Maximum allowable length of timber, inches
4 x 4	16	5,000	80,000	10	8,000	44
6 x 6	36	5,000	180,000	10	18,000	66
8 x 8	64	5,000	320,000	10	32,000	88
10 x 10	100	5,000	500,000	10	50,000	100
12 x 12	144	5,000	720,000	10	72,000	132

[1]Actual dimension.

[2]Adapted from U.S. Department of Agriculture Technical Bulletin 479. Hardwoods recommended are those whose ultimate crushing strengths in compression parallel to grain are 5,000 p.s.i. (pounds per square inch) or greater.

[3]Slenderness ratio formula for short columns is L/d=11, where L=length of timber in inches and d=least dimension in inches; this ratio should not exceed 11.

[Order 73–5, § 296–24–20021, filed 5/9/73 and Order 73–4, § 296–24–20021, filed 5/7/73.]

WAC 296–24–205 Mechanical power–transmission apparatus.

[Order 73–5, § 296–24–205, filed 5/9/73 and Order 73–4, § 296–24–205, filed 5/7/73.]

WAC 296–24–20501 Definitions. (1) "Belts" include all power transmission belts, such as flat belts, round belts, V–belts, etc., unless otherwise specified.

(2) "Belt shifter" means a device for mechanically shifting belts from tight to loose pulleys or vice versa, or for shifting belts on cones of speed pulleys.

(3) "Belt pole" (sometimes called a "belt shipper" or "shipper pole") means a device used in shifting belts on and off fixed pulleys on line or countershaft where there are no loose pulleys.

(4) "Exposed to contact" means that the location of an object is such that a person is likely to come into contact with it and be injured.

(5) "Flywheels" include flywheels, balance wheels, and flywheel pulleys mounted and revolving on crankshaft of engine or other shafting.

(6) "Maintenance runway" means any permanent runway or platform used for oiling, maintenance, running adjustment, or repair work, but not for passageway.

(7) "Nip–point belt and pulley guard" means a device which encloses the pulley and is provided with rounded or rolled edge slots through which the belt passes.

(8) "Point of operation" means that point at which cutting shaping, or forming is accomplished upon the stock and shall include such other points as may offer a hazard to the operator in inserting or manipulating the stock in the operation of the machine.

(9) "Prime movers" include steam, gas, oil, and air engines, motors, steam and hydraulic turbines, and other equipment used as a source of power.

(10) "Sheaves" mean grooved pulleys and shall be so classified unless used as flywheels.

[Order 73–5, § 296–24–20501, filed 5/9/73 and Order 73–4, § 296–24–20501, filed 5/7/73.]

WAC 296–24–20503 General requirements. (1) This section covers all types and shapes of power–transmission belts, except the following when operating at two hundred and fifty feet per minute or less:

(a) Flat belts one inch or less in width.

(b) Flat belts two inches or less in width which are free from metal lacings or fasteners.

(c) Round belts one–half inch or less in diameter.

(d) Single strand V–belts, the width of which is thirteen thirty–seconds inch or less.

(2) Vertical and inclined belts (WAC 296–24–20511 (3) and (4)) if not more than two and one–half inches wide and running at a speed of less than one thousand

feet per minute, and if free from metal lacings or fastenings may be guarded with a nip–point belt and pulley guard.

(3) For the textile industry, because of the presence of excessive deposits of lint, which constitute a serious fire hazard, the sides and face sections only of nip–point belt and pulley guards are required, provided the guard shall extend at least six inches beyond the rim of the pulley on the in–running and off–running sides of the belt and at least two inches away from the rim and face of the pulley in all other directions.

(4) These standards cover the principal features with which power transmission safeguards shall comply.

[Order 73–5, § 296–24–20503, filed 5/9/73 and Order 73–4, § 296–24–20503, filed 5/7/73.]

WAC 296–24–20505 Prime–mover guards. (1) Flywheels. Flywheels located so that any part is seven feet or less above floor or platform shall be guarded in accordance with the requirements of this section:

(a) With an enclosure of sheet, perforated, or expanded metal, or woven wire;

(b) With guard rails placed not less than fifteen inches nor more than twenty inches from rim. When flywheel extends into pit or is within 12 inches of floor, a standard toeboard shall also be provided;

(c) When the upper rim of flywheel protrudes through a working floor, it shall be entirely enclosed or surrounded by a guardrail and toeboard.

(d) For flywheels with smooth rims five feet or less in diameter, where the preceding methods cannot be applied, the following may be used: A disk attached to the flywheel in such manner as to cover the spokes of the wheel on the exposed side and present a smooth surface and edge, at the same time providing means for periodic inspection. An open space, not exceeding four inches in width, may be left between the outside edge of the disk and the rim of the wheel if desired, to facilitate turning the wheel over. Where a disk is used, the keys or other dangerous projections not covered by disk shall be cut off or covered. This subdivision does not apply to flywheels with solid web centers;

(e) Adjustable guard to be used for starting engine or for running adjustment may be provided at the flywheel of gas or oil engines. A slot opening for jack bar will be permitted;

(f) Wherever flywheels are above working areas, guards shall be installed having sufficient strength to hold the weight of the flywheel in the event of a shaft or wheel mounting failure.

(2) Cranks and connecting rods. Cranks and connecting rods, when exposed to contact shall be guarded in accordance with WAC 296–24–20527 and 296–24–20529, or by a guardrail as described in WAC 296–24–20531(5).

(3) Tail rods or extension piston rods. Tail rods or extension piston rods shall be guarded in accordance with WAC 296–24–20527 and 296–24–20529, or by a guardrail on sides and end, with a clearance of not less than fifteen nor more than twenty inches when rod is fully extended.

(4) Governor balls. Governor balls six feet or less from the floor or other working level, when exposed to contact, shall be provided with an enclosure extending to the top of the governor balls when at their highest position. The material used in the construction of this enclosure shall conform to WAC 296–24–20525 and 296–24–20529.

[Order 73–5, § 296–24–20505, filed 5/9/73 and Order 73–4, § 296–24–20505, filed 5/7/73.]

WAC 296–24–20507 Shafting. (1) Installation.

(a) Each continuous line of shafting shall be secured in position against excessive endwise movement.

(b) Inclines and vertical shafts, particularly inclined idler shafts, shall be securely held in position against endwise thrust.

(2) Guarding horizontal shafting.

(a) All exposed parts of horizontal shafting seven feet or less from floor or working platform excepting runways used exclusively for oiling, or running adjustments, shall be protected by a stationary casing enclosing shafting completely or by a trough enclosing sides and top or sides and bottom of shafting as location requires.

(b) Shafting under bench machines shall be enclosed by a stationary casing, or by a trough at sides and top or sides and bottom, as location requires. The sides of the trough shall come within at least six inches of the under side of table, or if shafting is located near floor within six inches of floor. In every case the sides of trough shall extend at least two inches beyond the shafting or protuberance.

(3) Guarding vertical and inclines shafting. Vertical and inclines shafting seven feet or less from floor or working platform, excepting maintenance runways, shall be enclosed with a stationary casing in accordance with requirements of WAC 296–24–20527 and 296–24–20531.

(4) Projecting shaft ends.

(a) Projecting shaft ends shall present a smooth edge and end and shall not project more than one–half the diameter of the shaft unless guarded by nonrotating caps or safety sleeves.

(b) Unused keyways shall be filled up or covered.

(5) Power–transmission apparatus located in basements. All mechanical power transmission apparatus located in basements, towers, and rooms used exclusively for power transmission equipment shall be guarded in accordance with this section, except that the requirements for safeguarding belts, pulleys, and shafting need not be complied with when the following requirements are met:

(a) The basement, tower, or room occupied by transmission equipment is locked against unauthorized entrance.

(b) The vertical clearance in passageways between the floor and power transmission beams, ceiling, or any other objects, is not less than five feet six inches.

(c) The intensity of illumination conforms to the requirements of ANSI A11.1–1965 (R–1970).

(d) The footing is dry, firm, and level.

(e) The route followed by the oiler is protected in such manner as to prevent accident.

[Order 73-5, § 296-24-20507, filed 5/9/73 and Order 73-4, § 296-24-20507, filed 5/7/73.]

WAC 296-24-20509 Pulleys. (1) Guarding. Pulleys, any parts of which are seven feet or less from the floor or working platform, shall be guarded in accordance with the standards specified in WAC 296-24-20527 and 296-24-20531. Pulleys serving as balance wheels (e.g., punch presses) on which the point of contact between belt and pulley is more than six feet six inches from the floor or platform may be guarded with a disk covering the spokes.

(2) Location of pulleys. (a) Unless the distance to the nearest fixed pulley, clutch, or hanger exceeds the width of the belt used, a guide shall be provided to prevent the belt from leaving the pulley on the side where insufficient clearance exists.

(b) Where there are overhanging pulleys on line, jack, or countershafts with no bearing between the pulley and the outer end of the shaft, a guide to prevent the belt from running off the pulley should be provided.

(3) Broken pulleys. Pulleys with cracks, or pieces broken out of rims, shall not be used.

(4) Pulley speeds. Pulleys intended to operate at rim speed in excess of manufacturers normal recommendations shall be specially designed and carefully balanced for the speed at which they are to operate.

(5) Compositions and wood pulleys. Composition or laminated wood pulleys shall not be installed where they are subjected to influences detrimental to their structural composition.

[Order 73-5, § 296-24-20509, filed 5/9/73 and Order 73-4, § 296-24-20509, filed 5/7/73.]

WAC 296-24-20511 Belt, rope, and chain drives. (1) Horizontal belts and ropes.

(a) Where both runs of horizontal belts are seven feet or less from the floor level, the guard shall extend to at least fifteen inches above the belt or to a standard height (see Table O-12), except that where both runs of a horizontal belt are 42 inches or less from the floor, the belt shall be fully enclosed in accordance with WAC 296-24-20527 and 296-24-20531.

(b) In powerplants or powerdevelopment rooms, a guardrail may be used in lieu of the guard required by (1)(a) of this section.

(2) Overhead horizontal belts.

(a) Overhead horizontal belts, with lower parts seven feet or less from the floor or platform, shall be guarded on sides and bottom in accordance with WAC 296-24-20531(3).

(b) Horizontal overhead belts more than seven feet above floor or platform shall be guarded for their entire length under the following conditions:

(i) If located over passageways or work places and traveling 1,800 feet or more per minute.

(ii) If center to center distance between pulleys is ten feet or more.

(iii) If belt is eight inches or more in width.

(c) Where the upper and lower runs of horizontal belts are so located that passage of persons between them would be possible, the passage shall be either:

(i) Completely barred by a guardrail or other barrier in accordance with WAC 296-24-20527 and 296-24-20531; or

(ii) Where passage is regarded as necessary, there shall be a platform over the lower run guarded on either side by a railing completely filled in with wire mesh or other filler, or by a solid barrier. The upper run shall be so guarded as to prevent contact therewith either by the worker or by objects carried by him. In powerplants only the lower run of the belt need be guarded.

(d) Overhead chain and link belt drives are governed by the same rules as overhead horizontal belts and shall be guarded in the same manner as belts.

(e) American or continuous system rope drives so located that the condition of the rope (particularly the splice) cannot be constantly and conveniently observed, shall be equipped with a telltale device (preferably electric-bell type) that will give warning when rope begins to fray.

(3) Vertical and inclined belts.

(a) Vertical and inclined belts shall be enclosed by a guard conforming to standards in WAC 296-24-20527 and 296-24-20531.

(b) All guards for inclined belts shall be arranged in such a manner that a minimum clearance of seven feet is maintained between belt and floor at any point outside of guard.

(4) Vertical belts. Vertical belts running over a lower pulley more than seven feet above floor or platform shall be guarded at the bottom in the same manner as horizontal overhead belts, if conditions are as stated in (2)(b)(i) and (iii) of this section.

(5) Cone-pulley belts.

(a) The cone belt and pulley shall be equipped with a belt shifter so constructed as to adequately guard the nip point of the belt and pulley. If the frame of the belt shifter does not adequately guard the nip point of the belt and pulley, the nip point shall be further protected by means of a vertical guard placed in front of the pulley and extending at least to the top of the largest step of the cone.

(b) If the belt is of the endless type or laced with rawhide laces, and a belt shifter is not desired, the belt will be considered guarded if the nip point of the belt and pulley is protected by a nip point guard located in front of the cone extending at least to the top of the largest step of the cone, and formed to show the contour of the cone in order to give the nip point of the belt and pulley the maximum protection.

(c) If the cone is located less than 3 feet from the floor or working platform, the cone pulley and belt shall be guarded to a height of 3 feet regardless of whether the belt is endless or laced with rawhide.

(6) Belt tighteners.

(a) Suspended counterbalanced tighteners and all parts thereof shall be of substantial construction and securely fastened; the bearings shall be securely capped.

Means must be provided to prevent tightener from falling, in case the belt breaks.

(b) Where suspended counterweights are used and not guarded by location, they shall be so encased as to prevent accident.

(c) Belt tighteners, used for starting and stopping machinery, other than those which are securely held in "off" or "out of service" position by gravity, shall be provided with means or mechanism that will securely hold the belt tightener away from the belt when the machine or part thereof driven by the belt is not in use. Such means or mechanism shall be automatic in its action in gripping, latching or otherwise fastening itself to and holding the belt tightener in "off" or "out of service" position until manually released. (Released by hand.)

(d) Counterbalanced belt tighteners and all parts thereof shall be of substantial construction, and securely fastened. The bearings shall be securely capped. If exposed to contact, means shall be installed to catch the belt tightener, to prevent tightener from falling on any person below, should the belt break or throw the tightener.

[Order 73-5, § 296-24-20511, filed 5/9/73 and Order 73-4, § 296-24-20511, filed 5/7/73.]

WAC 296-24-20513 Gears, sprockets, and chains. (1) Gears. Gears shall be guarded in accordance with one of the following methods:

(a) By a complete enclosure; or

(b) By a standard guard as described in WAC 296-24-20531, at least seven feet high extending six inches above the mesh point of the gears; or

(c) By a band guard covering the face of gear and having flanges extended inward beyond the root of the teeth on the exposed side or sides. Where any portion of the train of gears guarded by a band guard is less than six feet from the floor a disk guard or a complete enclosure to the height of six feet shall be required.

(2) Hand-operated gears. (1) of this section does not apply to hand-operated gears used only to adjust machine parts and which do not continue to move after hand power is removed. However, the guarding of these gears is highly recommended.

(3) Sprockets and chains. All sprocket wheels and chains shall be enclosed unless they are more then seven feet above the floor or platform. Where the drive extends over other machine or working areas, protection against falling shall be provided. This section does not apply to manually operated sprockets.

(4) Openings for oiling. When frequent oiling must be done, openings with hinged or sliding self-closing covers shall be provided. All points not readily accessible shall have oil feed tubes if lubricant is to be added while machinery is in motion.

[Order 73-5, § 296-24-20513, filed 5/9/73 and Order 73-4, § 296-24-20513, filed 5/7/73.]

WAC 296-24-20515 Guarding friction drives. The driving point of all friction drives when exposed to contact shall be guarded, all arm or spoke friction drives and all web friction drives with holes in the web shall be entirely enclosed, and all projecting belts on friction drives where exposed to contact shall be guarded.

[Order 73-5, § 296-24-20515, filed 5/9/73 and Order 73-4, § 296-24-20515, filed 5/7/73.]

WAC 296-24-20517 Keys, setscrews, and other projections. (1) All projecting keys, setscrews, and other projections in revolving parts shall be removed or made flush or guarded by metal covers. This section does not apply to keys or setscrews within gear or sprocket casings or other enclosures, nor to keys, setscrews, or oilcups in hubs of pulleys less than twenty inches in diameter where they are within the plane of the rim of the pulley.

Note: It is recommended, however, that no projecting setscrews or oilcups be used in any revolving pulley or part of machinery.

[Order 73-5, § 296-24-20517, filed 5/9/73 and Order 73-4, § 296-24-20517, filed 5/7/73.]

WAC 296-24-20519 Collars and couplings. (1) Collars. All revolving collars, including split collars, shall be cylindrical, and screws or bolts used in collars shall not project beyond the largest periphery of the collar.

(2) Couplings. Shaft couplings shall be so constructed as to present no hazard from bolts, nuts, setscrews, or revolving surfaces. Bolts, nuts, and setscrews will, however, be permitted where they are covered with safety sleeves or where they are used parallel with the shafting and are countersunk or else do not extend beyond the flange of the coupling.

[Order 73-5, § 296-24-20519, filed 5/9/73 and Order 73-4, § 296-24-20519, filed 5/7/73.]

WAC 296-24-20521 Bearings and facilities for oiling. Self lubricating bearings are recommended and all drip cups and pans shall be securely fastened.

[Order 73-5, § 296-24-20521, filed 5/9/73 and Order 73-4, § 296-24-20521, filed 5/7/73.]

WAC 296-24-20523 Guarding of clutches, cutoff couplings, and clutch pulleys. (1) Guards. Clutches, cutoff couplings, or clutch pulleys having projecting parts, where such clutches are located seven feet or less above the floor or working platform, shall be enclosed by a stationary guard constructed in accordance with WAC 296-24-20527. A "U" type guard is permissible.

(2) Enginerooms. In enginerooms a guardrail, preferably with toeboard, may be used instead of the guard required by (1) of this section, provided such a room is occupied only by engineroom attendants.

(3) Bearings. A bearing support immediately adjacent to a friction clutch or cutoff coupling shall have self-lubricating bearings requiring attention at infrequent intervals.

[Order 73-5, § 296-24-20523, filed 5/9/73 and Order 73-4, § 296-24-20523, filed 5/7/73.]

WAC 296-24-20525 Belt shifters, clutches, shippers, poles, perches, and fasteners. (1) Belt shifters.

(a) Tight and loose pulleys on all installations made on or after August 27, 1971, shall be equipped with a permanent belt shifter provided with mechanical means to prevent belt from creeping from loose to tight pulley. It is recommended that old installations be changed to conform to this rule.

(b) Belt shifter and clutch handles shall be rounded and be located as far as possible from danger of accidental contact, but within easy reach of the operator. Where belt shifters are not directly located over a machine or bench, the handles shall be cut off six feet six inches above floor level.

(c) All belt and clutch shifters of the same type in each shop should move in the same direction to stop machines, i.e., either all right or all left. This does not apply to friction clutch on countershaft carrying two clutch pulleys with open and crossed belts, respectively. In this case the shifter handle has three positions and the machine is at a standstill when clutch handle is in the neutral or center position.

(2) Belt shippers and shipper poles. The use of belt poles as substitutes for mechanical shifters is not recommended. Where necessity compels their use, they shall be of sufficient size to enable workmen to grasp them securely. (A two–inch diameter or 1 1/2 by 2 inches cross–section is suggested.) Poles shall be smooth and preferably of straight grain hardwood, such as ash or hickory. The edges of rectangular poles should be rounded. Poles should extend from the top of the pulley to within about forty inches of floor or working platform.

(3) Belt perches. Where loose pulleys or idlers are not practicable, belt perches in form of brackets, rollers, etc., shall be used to keep idle belts away from the shafts. Perches should be substantial and designed for the safe shifting of belts.

(4) Belt fasteners. Belts which of necessity must be shifted by hand and belts within seven feet of the floor or working platform which are not guarded in accordance with WAC 296–24–20527 shall not be fastened with metal in any case, nor with any other fastening which by construction or wear will constitute an accident hazard.

[Order 76–6, § 296–24–20525, filed 3/1/76; Order 73–5, § 296–24–20525, filed 5/9/73 and Order 73–4, § 296–24–20525, filed 5/7/73.]

WAC 296–24–20527 Standard guards--General requirements. (1) Materials.

(a) Standard conditions shall be secured by the use of the following materials. Expanded metal, perforated or solid sheet metal, wire mesh on a frame of angle iron, or iron pipe securely fastened to floor or to frame of machine.

(b) All metal should be free from burrs and sharp edges.

(c) Wire mesh should be of the type in which the wires are securely fastened at every cross point either by welding, soldering, or galvanizing, except in case of diamond or square wire mesh made of No. 14 gage wire, 3/4–inch mesh or heavier.

(2) Methods of manufacture.

(a) Expanded metal, sheet or perforated metal, and wire mesh shall be securely fastened to frame by one of the following methods:

(i) With rivets or bolts spaced not more than five inches center to center. In case of expanded metal or wire mesh, metal strips or clips shall be used to form a washer for rivets or bolts.

(ii) By welding to frame every four inches.

(iii) By weaving through channel or angle frame, or if No. 14 gage 3/4–inch mesh or heavier is used by bending entirely around rod frames.

(iv) Where openings in pipe railing are to be filled in with expanded metal, wire mesh or sheet metal, the filler material shall be made into panels with rolled edges or bound with "V" or "U" edging of No. 24 gage or heavier sheet metal fastened to the panels with bolts or rivets spaced not more than five inches center to center. The bound panels shall be fastened to the railing by sheet–metal clips spaced not more than five inches center to center.

(v) Diamond or square mesh made of crimped wire fastened into channels, angle or round–iron frames, may also be used as a filler in guards. Size of mesh shall correspond to Table O–12.

(b) Where the design of guards requires filler material of greater area than 12 square feet, additional frame members shall be provided to maintain panel area within this limit.

(c) All joints of framework shall be made equivalent in strength to the material of the frame.

[Order 73–5, § 296–24–20527, filed 5/9/73 and Order 73–4, § 296–24–20527, filed 5/7/73.]

WAC 296–24–20529 Disk, shield, and "U" guards. (1) Disk guards. A disk guard shall consist of a sheet–metal disk not less than No. 22 gage fastened by "U" bolts or rivets to spokes of pulleys, flywheels, or gears. Where possibility of contact with sharp edges of the disk exists, the edge shall be rolled or wired. In all cases the nuts shall be provided with locknuts which shall be placed on the unexposed side of the wheel.

(2) Shield guards.

(a) A shield guard shall consist of a frame filled in with wire mesh, expanded, perforated, or solid sheet metal.

(b) If area of shield does not exceed six square feet the wire mesh or expanded metal may be fastened in a framework of 3/8–inch solid rod, 3/4–inch by 3/4–inch by 1/8–inch angle iron or metal construction of equivalent strength. Metal shields may have edges entirely rolled around a 3/8–inch solid iron rod.

(3) "U" guards. A "U" guard consisting of a flat surface with edge members shall be designed to cover the under surface and lower edge of a belt, multiple chain, or rope drive. It shall be constructed of materials specified in Table O–12, and shall conform to the requirements of WAC 296–24–20531 (3) and (4). Edges shall be smooth and if size of guard requires, the edges shall be reinforced by rolling, wiring, or by binding with angle or flat iron.

[Order 73-5, § 296-24-20529, filed 5/9/73 and Order 73-4, § 296-24-20529, filed 5/7/73.]

WAC 296-24-20531 Approved materials. (1) Minimum requirements. The materials and dimensions specified in this section shall apply to all guards, except horizontal overhead belts, rope, cable, or chain guards more than seven feet above floor, or platform. (For the latter, see Table O-13.)

(a) Minimum dimensions of materials for the framework of all guards, except as noted in (1)(a)(iii) of this section shall be angle iron 1 inch by 1 inch by 1/8 inch, metal pipe of 3/4-inch inside diameter or metal construction of equivalent strength.

(i) All guards shall be rigidly braced every three feet or fractional part of their height to some fixed part of machinery or building structure. Where guard is exposed to contact with moving equipment additional strength may be necessary.

(ii) The framework for all guards fastened to floor or working platform and without other support or bracing shall consist of 1 1/2-inch by 1 1/2-inch by 1/8-inch angle iron, metal pipe of 1 1/2-inch inside diameter, or metal construction of equivalent strength. All rectangular guards shall have at least four upright frame members each of which shall be carried to the floor and be securely fastened thereto. Cylindrical guards shall have at least three supporting members carried to floor.

(iii) Guards thirty inches or less in height and with a total surface area not in excess of ten square feet may have a frame work of 3/8-inch solid rod, 3/4-inch by 3/4-inch by 1/8-inch angle, or metal construction of equivalent strength. The filling material shall correspond to the requirements of Table O-12.

(b) The specifications given in Table O-12 and (1)(a) of this section are minimum requirements; where guards are exposed to unusual wear, deterioration or impact, heavier material and construction should be used to protect amply against the specific hazards involved.

(2) Wood guards.

(a) Wood guards may be used in the woodworking and chemical industries, in industries where the presence of fumes or where manufacturing conditions would cause the rapid deterioration of metal guards; also in construction work and in locations outdoors where extreme cold or extreme heat make metal guards and railings undesirable. In all other industries, wood guards shall not be used.

(i) Wood shall be sound, tough, and free from any loose knots.

(ii) Guards shall be made of planed lumber not less than one inch rough board measure, and edges and corners rounded off.

(iii) Wood guards shall be securely fastened together with wood screws, hardwood dowel pins, bolts, or rivets.

(iv) While no definite dimensions are given under this heading for framework or filler materials, wood guards shall be equal in strength and rigidity to metal guards specified in (1)(a) and (b) of this section and Table O-12.

(v) For construction of standard wood railing, see (5) of this section.

(3) Guards for horizontal overhead belts.

(a) Guards for horizontal overhead belts shall run the entire length of the belt and follow the line of the pulley to the ceiling or be carried to the nearest wall, thus enclosing the belt effectively. Where belts are so located as to make it impracticable to carry the guard to wall or ceiling, construction of guard shall be such as to enclose completely the top and bottom runs of belt and the face of pulleys.

(b) The guard and all its supporting members shall be securely fastened to wall or ceiling by gimlet-point lag screws or through bolts. In case of masonry construction, expansion bolts shall be used. The use of bolts placed horizontally through floor beams or ceiling rafters is recommended.

(c) Suitable reinforcement shall be provided for the ceiling rafters or overhead floor beams, where such is necessary, to sustain safely the weight and stress likely to be imposed by the guard. The interior surface of all guards, by which is meant the surface of the guard with which a belt will come in contact, shall be smooth and free from all projections of any character, except where construction demands it; protruding shallow roundhead rivets may be used. Overhead belt guards shall be at least one-quarter wider than belt which they protect, except that this clearance need not in any case exceed six inches on each side. Overhead rope drive and block and roller-chain-drive guards shall be not less than six inches wider than the drive on each side. In overhead silent chain-drive guards where the chain is held from laterial displacement on the sprockets, the side clearances required on drives of twenty inch centers or under shall be not less than one-fourth inch from the nearest moving chain part, and on drives of over twenty inch centers a minimum of one-half inch from the nearest moving chain part.

(d) Table O-13 gives the sizes of materials to be used and the general construction specifications of guards for belts ten inches or more in width. No material for overhead belt guards should be smaller than that specified in Table O-13 for belts ten to fourteen inches wide, even if the overhead belt is less than ten inches in width. However, No. 20 gage sheet metal may be used as a filler on guards for belts less than ten inches wide. Expanded metal, because of the sharp edges, should not be used as a filler in horizontal belt guards.

(e) For clearance between guards and belts, ropes or chains of various center to center dimensions between the shafts, see bottom of Table O-13.

(4) Guards for horizontal overhead-rope and chain-drives. Overhead-rope and chain-drive guard construction shall conform to the rules for overhead-belt guard construction of similar width, except that the filler material shall be of the solid type as shown in Table O-13, unless the fire hazard demands the use of open construction. A side guard member of the same solid filling material should be carried up in a vertical position two inches above the level of the lower run of the rope or chain drive and two inches within the periphery of the

pulleys which the guard encloses thus forming a trough. These side filler members should be reinforced on the edges with 1 1/2–inch by 1/4–inch flat steel, riveted to the filling material at not greater than eight inch centers; the reinforcing strip should be fastened or bolted to all guard supporting members with at least one 3/8–inch rivet or bolt at each intersection, and the ends should be secured to the ceiling with lag screws or bolts. The filling material shall be fastened to the framework of the guard and the filler supports by 3/16–inch rivets spaced on 4–inch centers. The width of the multiple drive shall be determined by measuring the distance from the outside of the first to the outside of the last rope or chain in the group accommodated by the pulley.

(5) Guardrails and toeboards.

(a) Guardrail shall be forty–two inches in height, with midrail between top rail and floor.

(b) Posts shall be not more than eight feet apart; they are to be permanent and substantial, smooth, and free from protruding nails, bolts, and splinters. If made of pipe, the post shall be one and one–fourth inches inside diameter, or larger. If made of metal shapes or bars, their section shall be equal in strength to that of one and one–half by one and one–half by three–sixteenths inch angle iron. If made of wood, the posts shall be two by four inches or larger. The upper rail shall be two by four inches, or two one by four strips, one at the top and one at the side of posts. The midrail may be one by four inches or more. The rails (metal shapes, metal bars, or wood), should be on that side of the posts which gives the best protection and support. Where panels are fitted with expanded metal or wire mesh as noted in Table O–12 the middle rails may be omitted. Where guard is exposed to contact with moving equipment, additional strength may be necessary.

(c) Toeboards shall be four inches or more in height, of wood, metal, or of metal grill not exceeding one inch mesh. Toeboards at flywheel pits should preferably be placed as close to edge of the pit as possible.

TABLE O–12

TABLE OF STANDARD MATERIALS AND DIMENSIONS

Material	Clearance from moving part at all points	Largest mesh or opening allowable	Minimum gauge (U.S. Standard) or thickness	Minimum height of guard from floor or platform level
	Inches	Inches	Inches	Feet
Woven wire	Under 2	3/8	No. 16	7
	2–4	1/2	No. 16	7
	Under 4	1/2	No. 16	7
	4–15	2	No. 12	7
Expanded metal	Under 4	1/2	No. 18	7
	4–15	2	No. 13	7
Perforated metal	Under 4	1/2	No. 20	7
	4–15	2	No. 14	7
Sheet metal	Under 4		No. 22	7
	4–15		No. 22	7

TABLE O–12

TABLE OF STANDARD MATERIALS AND DIMENSIONS

Material	Clearance from moving part at all points	Largest mesh or opening allowable	Minimum gauge (U.S. Standard) or thickness	Minimum height of guard from floor or platform level
	Inches	Inches	Inches	Feet
Wood or metal strip crossed	Under 4	3/8	Wood 3/4 Metal No. 16	7
	4–15	2	Wood 3/4 Metal No. 16	7
Wood or metal strip not crossed	Under 4	1/2 width	Wood 3/4 Metal No. 16	7
	4–15	1 width	Wood 3/4 Metal No. 16	7
Standard rail	Min. 15 Max. 20			

[Order 76–6, § 296–24–20531, filed 3/1/76; Order 73–5, § 296–24–20531, filed 5/9/73 and Order 73–4, § 296–24–20531, filed 5/7/73.]

WAC 296–24–20533 Care of equipment. (1) General. All power–transmission equipment shall be inspected at intervals not exceeding 60 days and be kept in good working condition at all times.

(2) Shafting.

(a) Shafting shall be kept in alignment, free from rust and excess oil or grease.

(b) Where explosives, explosive dusts, flammable vapors or flammable liquids exist, the hazard of static sparks from shafting shall be carefully considered.

(3) Bearings. Bearings shall be kept in alignment and properly adjusted.

(4) Hangers. Hangers shall be inspected to make certain that all supporting bolts and screws are tight and that supports of hanger boxes are adjusted properly.

(5) Pulleys.

(a) Pulleys shall be kept in proper alignment to prevent belts from running off.

(b) One or both pulleys carrying a nonshifting belt should have crowned faces.

(c) Cast–iron pulleys should be tested frequently with a hammer to disclose cracks in rim or spokes. It should be borne in mind that the sound is usually much different if the belt is or is not on the pulley.

(d) Split pulleys should be inspected to ascertain if all bolts holding together the sections of the pulley are tight.

(6) Care of belts.

(a) Quarter–twist belts when installed without an idler can be used on drives running in one direction only. They will run off a pulley when direction of motion is reversed.

(b) Inspection shall be made of belts, lacings, and fasteners and such equipment kept in good repair.

(c) Where possible, dressing should not be applied when belt or rope is in motion; but, if this is necessary, it should be applied where belts or rope leave pulley, not

where they approach. The same precautions apply to lubricating chains. In the case of V–belts, belt dressing is neither necessary nor advisable.

(7) Lubrication. The regular oilers shall wear tightfitting clothing and should use cans with long spouts to keep their hands out of danger. Machinery shall be oiled when not in motion, wherever possible.

TABLE O–13

HORIZONTAL OVERHEAD BELTS, ROPES, AND CHAINS 7 FEET OR MORE ABOVE FLOOR OR PLATFORM

(TABLE O–13: Part 1--0" to 14")

	Width	
	From 0" to 14" inclusive	Material
MEMBERS		
Framework	1 1/2"x1 1/2"x1/4"	Angle iron.
Filler (belt guards)	1 1/2"x3/16"	Flat iron.
Filler and vertical side member	No. 20 A.W.G.	Solid sheet metal.
Filler supports	2"x5/16" flat iron	Flat and angle.
Guard supports	2"x5/16	Flat iron.
FASTENINGS		
Filler supports to framework	(2) 3/16"	Rivets.
Filler flats to supports (belt guards)	(1) 5/16"	Flush rivets.
Filler to frame and supports (chain guards)	3/16" rivets spaced	
Guard supports to frame work	(2) 3/6"	Rivets or bolts.
Guard and supports to overhead ceiling	1/4"x3 1/2" lag screws or 1/2" bolts	Lag screws or bolts.
DETAILS—SPACING, ETC.		
Width of guards	One–quarter wider than belt, rope, or chain drive	
Spacing between filler supports	20" C. to C	
Spacing between filler flats (belt guards)	2" apart	
Spacing between guard supports	36" C. to C	
OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 20 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 12 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Up to 15' inclusive	Over 40'.
Clearance from belt, or chain to guard	6"	20".

(TABLE O–13: Part 2--Over 14" to 24")

	Width	
	Over 14" to 24" inclusive	Material
MEMBERS		
Framework	2"x2"x5/16"	Angle iron.
Filler (belt guards)	2"x3/16"	Flat iron.
Filler and vertical side member	No. 18 A.W.G.	Solid sheet metal.
Filler supports	2"x3/8" flat iron	Flat and angle.
Guard supports	2"x3/8"	Flat iron.
FASTENINGS		
Filler supports to framework	(2) 3/6"	Rivets.
Filler flats to supports (belt guards)	(1) 5/16"	Flush rivets.
Filler to frame and supports (chain guards)	8" centers on sides and 4" centers on bottom	
Guard supports to frame work	(2) 7/16"	Rivets or bolts.
Guard and supports to overhead ceiling	5/8"x4" lag screws or 5/8" bolts	Lag screws or bolts.
DETAILS—SPACING, ETC.		
Width of guards		
Spacing between filler supports	16" C. to C	
Spacing between filler flats (belt guards)	2 1/2" apart	
Spacing between guard supports	36" C. to C	
OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 18 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 10 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Over 15' to 25' inclusive	Over 40'.
Clearance from belt, or chain to guard	10"	20".

(TABLE O–13: Part 3--Over 24")

	Width	
	Over 24"	Material
MEMBERS		
Framework	3"x3"x3/8"	Angle iron.
Filler (belt guards)	2"x5/16"	Flat iron.
Filler and vertical side member	No. A.W.G.	Solid sheet metal.
Filler supports	2 1/2"x2 1/2"x1/4" angle	Flat and angle.
Guard supports	2 1/2"x3/8"	Flat iron.

(TABLE O–13: Part 3––Over 24")

	Width	
	Over 24"	Material
FASTENINGS		
Filler supports to framework	(3) 1/2"	Rivets.
Filler flats to supports (belt guards)	(2) 3/8"	Flush rivets.
Filler to frame and supports (chain guards)		
Guard supports to frame work	(2) 5/8"	Rivets or bolts.
Guard and supports to overhead ceiling	3/4"x6" lag screws or 3/4" bolts.	Lag screws or bolts.
DETAILS—SPACING, ETC.		
Width of guards		
Spacing between filler supports	16" C. to C.	
Spacing between filler flats (belt guards)	4" apart	
Spacing between guard supports	36" C. to C.	
OTHER BELT GUARD FILLING PERMITTED		
Sheet metal fastened as in chain guards	No. 18 A.W.G.	Solid or perforated.
Woven wire, 2" mesh	No. 8 A.W.G.	
CLEARANCE FROM OUTSIDE OF BELT, ROPE, OR CHAIN DRIVE TO GUARD		
Distance center to center of shafts	Over 25' to 40' inclusive	Over 40'.
Clearance from belt, or chain to guard	15"	20".

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–20533, filed 11/13/80; Order 73–5, § 296–24–20533, filed 5/9/73 and Order 73–4, § 296–24–20533, filed 5/7/73.]

Part D

MATERIALS HANDLING AND STORAGE, INCLUDING CRANES, DERRICKS, ETC., AND RIGGING

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-220 Indoor general storage. [Order 73-5, § 296-24-220, filed 5/9/73 and Order 73-4, § 296-24-220, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22001 Definitions. [Order 73-5, § 296-24-22001, filed 5/9/73 and Order 73-4, § 296-24-22001, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22003 General requirements. [Order 73-5, § 296-24-22003, filed 5/9/73 and Order 73-4, § 296-24-22003, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22005 Piling procedures and precautions. [Order 73-5, § 296-24-22005, filed 5/9/73 and Order 73-4, § 296-24-22005, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22007 Fire protection requirements. [Order 73-5, § 296-24-22007, filed 5/9/73 and Order 73-4, § 296-24-22007, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22009 Mechanical handling equipment. [Order 73-5, § 296-24-22009, filed 5/9/73 and Order 73-4, § 296-24-22009, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

296-24-22011 Building service equipment. [Order 73-5, § 296-24-22011, filed 5/9/73 and Order 73-4, § 296-24-22011, filed 5/7/73.] Repealed by Order 74-27, filed 5/7/74.

WAC 296-24-215 Materials handling and storage--Handling materials--General.

[Order 73-5, § 296-24-215, filed 5/9/73 and Order 73-4, § 296-24-215, filed 5/7/73.]

WAC 296-24-21501 Use of mechanical equipment. Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

[Order 73-5, § 296-24-21501, filed 5/9/73 and Order 73-4, § 296-24-21501, filed 5/7/73.]

WAC 296-24-21503 Secure storage. Storage of material shall not create a hazard. Bags, containers, bundles, etc., stored in tiers shall be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

[Order 73-5, § 296-24-21503, filed 5/9/73 and Order 73-4, § 296-24-21503, filed 5/7/73.]

WAC 296-24-21505 Housekeeping. Storage areas shall be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

[Order 73-5, § 296-24-21505, filed 5/9/73 and Order 73-4, § 296-24-21505, filed 5/7/73.]

WAC 296-24-21507 Drainage. Proper drainage shall be provided.

[Order 73-5, § 296-24-21507, filed 5/9/73 and Order 73-4, § 296-24-21507, filed 5/7/73.]

WAC 296-24-21509 Clearance limits. Clearance signs to warn of clearance limits shall be provided.

[Order 73-5, § 296-24-21509, filed 5/9/73 and Order 73-4, § 296-24-21509, filed 5/7/73.]

WAC 296-24-21511 Rolling railroad cars. Derail and/or bumper blocks shall be provided on spur railroad tracks where a rolling car could contact other cars being worked, enter a building, work or traffic area.

(1) A clearly audible warning system shall be employed when cars are being moved by car pullers or locomotives, and when the person responsible for the moving does not have assurance that the area is clear, and it is safe to move the car or cars.

[Order 74-27, § 296-24-21511, filed 5/7/74; Order 73-5, § 296-24-21511, filed 5/9/73 and Order 73-4, § 296-24-21511, filed 5/7/73.]

WAC 296-24-21513 Guarding. Covers and/or guardrails shall be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, etc.

[Order 73-5, § 296-24-21513, filed 5/9/73 and Order 73-4, § 296-24-21513, filed 5/7/73.]

WAC 296-24-21515 Conveyors. Conveyors shall be constructed operated and maintained in accordance with the provisions of ANSI B 20.1-1957. The following additional provisions shall also apply where applicable.

(1) When the return strand of a conveyor operates within seven feet of the floor there shall be a trough provided of sufficient strength to carry the weight resulting from a broken chain.

(2) If the strands are over a passageway a means shall be provided to catch and support the ends of the chain in the event of a break.

(3) When the working strand of a conveyor crosses within three feet of the floor level in passageways, the trough in which it works shall be bridged the full width of the passageway.

(4) Whenever conveyors pass adjacent to or over working areas or passageways used by personnel, protective guards shall be installed. These guards shall be designed to catch and hold any load or materials which may fall off or become dislodged and injure a worker.

(5) Walking on rolls prohibited. Employees shall not be allowed to walk on the rolls of roller-type conveyors except for emergency.

(6) Guarding shaftway and material entrances of elevator type conveyors. Guards, screens or barricades of sufficient strength and size to prevent material from falling shall be installed on all sides of the shaftway of elevator-type conveyors except at openings where material is loaded or unloaded. Automatic shaftway gates or suitable barriers shall be installed at each floor level where material is loaded or unloaded from the platform.

(7) Emergency conveyor stops. Conveyors shall be provided with an emergency stopping device which can be reached from the conveyor. Such device shall be located near the material entrance to each barker, chipper,

saw, or similar type of equipment except where the conveyor leading into such equipment is under constant control of an operator who has full view of the material entrance and is located where he cannot possibly fall onto the conveyor.

(8) Safe access to conveyors. Where conveyors are in excess of 7' in height, means shall be provided to safely permit essential inspection and maintenance operations.

(9) Worn parts. Any part showing signs of significant wear shall be inspected carefully and replaced prior to reaching a condition where it may create a hazard.

(10) Replacement of parts. Replacement parts shall be equal to or exceed the manufacturer's specifications.

[Order 74-27, § 296-24-21515, filed 5/7/74; Order 73-5, § 296-24-21515, filed 5/9/73 and Order 73-4, § 296-24-21515, filed 5/7/73.]

WAC 296-24-217 Servicing multi-piece and single-piece rim wheels.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-217, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-217, filed 11/13/80.]

WAC 296-24-21701 Scope. (1) This section applies to the servicing of multi-piece and single-piece rim wheels used on large vehicles such as trucks, tractors, trailers, buses and off-road machines. It does not apply to the servicing of rim wheels used on automobiles, or on pickup trucks and vans utilizing automobile tires or truck tires designated "LT."

(2) This section does not apply to employers and places of employment regulated under the Construction safety standards, chapter 296-155 WAC; Agriculture standards, chapter 296-306 WAC; or the Maritime standards, chapter 296-56 WAC.

(3) All provisions of this section apply to the servicing of both single-piece rim wheels and multi-piece rim wheels unless designated otherwise.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21701, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21701, filed 11/13/80.]

WAC 296-24-21703 Definitions. (1) "Barrier" means a fence, wall or other structure or object placed between a single-piece rim wheel and an employee during tire inflation, to contain the rim wheel components in the event of the sudden release of the contained air of the single-piece rim wheel.

(2) "Charts" means the United States Department of Transportation, National Highway Traffic Safety Administration (NHTSA) publications entitled *Safety Precautions for Mounting and Demounting Tube-Type Truck/Bus Tires* and *Multi-Piece Rim Wheel Matching Chart*, or any other publications such as rim manuals containing, at a minimum, the same instructions, safety precautions and other information contained on those charts that are applicable to the types of rim wheels being serviced.

(3) "Installing a rim wheel" means the transfer and attachment of an assembled rim wheel onto a vehicle axle hub. "Removing" means the opposite of installing.

(4) "Mounting a tire" means the assembly or putting together of the wheel and tire components to form a rim wheel, including inflation. "Demounting" means the opposite of mounting.

(5) "Multi-piece rim wheel" means the assemblage of a multi-piece wheel with the tire tube and other components.

(6) "Multi-piece wheel" means a vehicle wheel consisting of two or more parts, one of which is a side or locking ring designed to hold the tire on the wheel by interlocking components when the tire is inflated.

(7) "Restraining device" means an apparatus such as a cage, rack, assemblage of bars and other components that will constrain all rim wheel components during an explosive separation of a multi-piece rim wheel, or during the sudden release of the contained air of a single-piece rim wheel.

(8) "Rim manual" means a publication containing instructions from the manufacturer or other qualified organization for correct mounting, demounting, maintenance, and safety precautions peculiar to the type of wheel being serviced.

(9) "Rim wheel" means an assemblage of tire, tube and liner (where appropriate), and wheel components.

(10) "Service" or "servicing" means the mounting and demounting of rim wheels, and related activities such as inflating, deflating, installing, removing, and handling.

(11) "Service area" means that part of an employer's premises used for the servicing of rim wheels, or any other place where an employee services rim wheels.

(12) "Single-piece rim wheel" means the assemblage of single-piece rim wheel with the tire and other components.

(13) "Single-piece wheel" means a vehicle wheel consisting of one part, designed to hold the tire on the wheel when the tire is inflated.

(14) "Trajectory" means any potential path or route that a rim wheel component may travel during an explosive separation, or the sudden release of the pressurized air, or an area at which an airblast from a single-piece rim wheel may be released. The trajectory may deviate from paths which are perpendicular to the assembled position of the rim wheel at the time of separation or explosion. (See Appendix A for examples of trajectories.)

(15) "Wheel" means that portion of a rim wheel which provides the method of attachment of the assembly to the axle of a vehicle and also provides the means to contain the inflated portion of the assembly (i.e., the tire and/or tube).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21703, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21703, filed 11/13/80.]

WAC 296-24-21705 Employee training. (1) The employer shall provide a program to train all employees who service rim wheels in the hazards involved in servicing those rim wheels and the safety procedures to be followed.

(a) The employer shall assure that no employee services any rim wheel unless the employee has been trained and instructed in correct procedures of servicing the type of wheel being serviced, and in the safe operating procedures described in WAC 296-24-21711 and 296-24-21713.

(b) Information to be used in the training program shall include, at a minimum, the applicable data contained in the charts (rim manuals) and the contents of this standard.

(c) Where an employer knows or has reason to believe that any of his employees is unable to read and understand the charts or rim manual, the employer shall assure that the employee is instructed concerning the contents of the charts and rim manual in a manner which the employee is able to understand.

(2) The employer shall assure that each employee demonstrates and maintains the ability to service rim wheels safely, including performance of the following tasks:

(a) Demounting of tires (including deflation);

(b) Inspection and identification of the rim wheel components;

(c) Mounting of tires (including inflation with a restraining device or other safeguard required by this section);

(d) Use of the restraining device or barrier, and other equipment required by this section;

(e) Handling of rim wheels;

(f) Inflation of the tire when a single-piece rim wheel is mounted on a vehicle;

(g) An understanding of the necessity of standing outside the trajectory both during inflation of the tire and during inspection of the rim wheel following inflation; and

(h) Installation and removal of rim wheels.

(3) The employer shall evaluate each employee's ability to perform these tasks and to service rim wheels safely, and shall provide additional training as necessary to assure that each employee maintains his or her proficiency.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21705, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21705, filed 8/21/84. Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21705, filed 11/13/80.]

WAC 296-24-21707 Tire servicing equipment. (1) The employer shall furnish a restraining device for inflating tires on multi-piece wheels.

(2) The employer shall provide a restraining device or barrier for inflating tires on single-piece wheels unless the rim wheel will be bolted onto a vehicle during inflation.

(3) Restraining devices and barriers shall comply with the following requirements:

(a) Each restraining device or barrier shall have the capacity to withstand the maximum force that would be transferred to it during a rim wheel separation occurring at one hundred fifty percent of the maximum tire specification pressure for the type of rim wheel being serviced.

(b) Restraining devices and barriers shall be capable of preventing the rim wheel components from being thrown outside or beyond the device or barrier for any rim wheel positioned within or behind the device;

(c) Restraining devices and barriers shall be visually inspected prior to each day's use and after any separation of the rim wheel components or sudden release of contained air. Any restraining device or barrier exhibiting damage such as the following defects shall be immediately removed from service:

(i) Cracks at welds;

(ii) Cracked or broken components;

(iii) Bent or sprung components caused by mishandling, abuse, tire explosion or rim wheel separation;

(iv) Pitting of components due to corrosion; or

(v) Other structural damage which would decrease its effectiveness.

(d) Restraining devices or barriers removed from service shall not be returned to service until they are repaired and reinspected. Restraining devices or barriers requiring structural repair such as component replacement or rewelding shall not be returned to service until they are certified by either the manufacturer or a registered professional engineer as meeting the strength requirements of subsection (3)(a) of this section.

(4) The employer shall furnish and assure that an air line assembly consisting of the following components be used for inflating tires:

(i) A clip-on chuck;

(ii) An in-line valve with a pressure gauge or a presettable regulator; and

(iii) A sufficient length of hose between the clip-on chuck and the in-line valve (if one is used) to allow the employee to stand outside the trajectory.

(5) Current charts (rim manuals) containing instructions for the types of wheels being serviced shall be available in the service area.

(6) The employer shall furnish and assure that only tools recommended in the rim manual for the type of wheel being serviced are used to service rim wheels.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21707, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21707, filed 8/21/84. Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21707, filed 11/13/80.]

WAC 296-24-21709 Wheel component acceptability. (1) Multi-piece wheel components shall not be interchanged except as provided in the charts, or in the applicable rim manual.

(2) Multi-piece wheel components and single-piece wheels shall be inspected prior to assembly. Any wheel or wheel component which is bent out of shape, pitted from corrosion, broken or cracked shall not be used and shall be marked or tagged unserviceable and removed from the service area. Damaged or leaky valves shall be replaced.

(3) Rim flanges, rim gutters, rings, bead seating surfaces and the bead areas of tires shall be free of any dirt, surface rust, scale or loose or flaked rubber build-up prior to mounting and inflation.

(4) The size (bead diameter and tire/wheel widths) and type of both the tire and the wheel shall be checked for compatibility prior to assembly of the rim wheel.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21709, filed 8/21/84. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21709, filed 11/13/80.]

WAC 296-24-21711 Safe operating procedure--Multi-piece rim wheels. The employer shall establish a safe operating procedure for servicing multi-piece rim wheels and shall assure that employees are instructed in and follow that procedure. The procedure shall include at least the following elements:

(1) Tires shall be completely deflated before demounting by removal of the valve core.

(2) Tires shall be completely deflated by removing the valve core, before a rim wheel is removed from the axle in either of the following situations:

(a) When the tire has been driven underinflated at eighty percent or less of its recommended pressure, or

(b) When there is obvious or suspected damage to the tire or wheel components.

(3) Rubber lubricant shall be applied to bead and rim mating surfaces during assembly of the wheel and inflation of the tire, unless the tire or wheel manufacturer recommends against it.

(4) If a tire on a vehicle is underinflated but has more than eighty percent of the recommended pressure, the tire may be inflated while the rim wheel is on the vehicle provided remote control inflation equipment is used, and no employees remain in the trajectory during inflation.

(5) Tires shall be inflated outside a restraining device only to a pressure sufficient to force the tire bead onto the rim ledge and create an airtight seal with the tire and bead.

(6) Whenever a rim wheel is in a restraining device the employee shall not rest or lean any part of his body or equipment on or against the restraining device.

(7) After tire inflation, the tire and wheel components shall be inspected while still within the restraining device to make sure that they are properly seated and locked. If further adjustment to the tire or wheel components is necessary, the tire shall be deflated by removal of the valve core before the adjustment is made.

(8) No attempt shall be made to correct the seating of side and lock rings by hammering, striking or forcing the components while the tire is pressurized.

(9) Cracked, broken, bent or otherwise damaged rim components shall not be reworked, welded, brazed, or otherwise heated.

(10) Whenever multi-piece rim wheels are being handled, employees shall stay out of the trajectory unless the employer can demonstrate that performance of the servicing makes the employee's presence in the trajectory necessary.

(11) No heat shall be applied to a multi-piece wheel or wheel component.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-24-21711, filed 1/17/86; 84-17-099 (Order 84-18), § 296-24-21711, filed 8/21/84. Statutory Authority: RCW 49-.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-014 (Order 80-20), § 296-24-21711, filed 11/13/80.]

WAC 296-24-21713 Safe operating procedure--Single-piece rim wheels. The employer shall establish a safe operating procedure for servicing single-piece rim wheels and shall assure that employees are instructed in and follow that procedure. The procedure shall include at least the following elements:

(1) Tires shall be completely deflated by removal of the valve core before demounting.

(2) Mounting and demounting of the tire shall be done only from the narrow ledge side of the wheel. Care shall be taken to avoid damaging the tire beads while mounting tires on wheels. Tires shall be mounted only on compatible wheels of matching bead diameter and width.

(3) Nonflammable rubber lubricant shall be applied to bead and wheel mating surfaces before assembly of the rim wheel, unless the tire or wheel manufacturer recommends against the use of any rubber lubricant.

(4) If a tire changing machine is used, the tire shall be inflated only to the minimum pressure necessary to force the tire bead onto the rim ledge while on the tire changing machine.

(5) If a bead expander is used, it shall be removed before the valve core is installed and as soon as the rim wheel becomes airtight (the tire bead slips onto the bead seat).

(6) Tires may be inflated only when contained within a restraining device, positioned behind a barrier or bolted on the vehicle with the lug nuts fully tightened.

(7) Tires shall not be inflated when any flat, solid surface is in the trajectory and within one foot of the sidewall.

(8) Employees shall stay out of the trajectory when inflating a tire.

(9) Tires shall not be inflated to more than the inflation pressure stamped in the sidewall unless a higher pressure is recommended by the manufacturer.

(10) Tires shall not be inflated above the maximum pressure recommended by the manufacturer to seat the tire bead firmly against the rim flange.

(11) No heat shall be applied to a single-piece wheel.

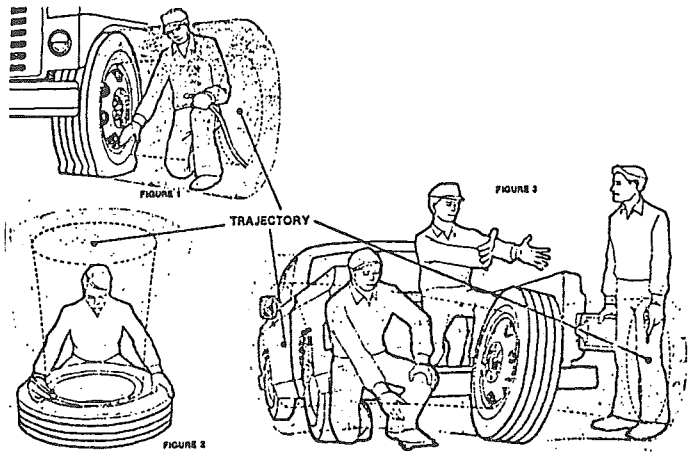
(12) Cracked, broken, bent, or otherwise damaged wheels shall not be reworked, welded, brazed, or otherwise heated.

APPENDIX A
TRAJECTORY

WARNING

STAY OUT OF
THE TRAJECTORY AS
INDICATED BY SHADED AREA

Note: Under some circumstances, the trajectory may deviate from its expected path.



Appendix B—Ordering Information for NHTSA charts

OSHA has reprinted the NHTSA charts as part of a continuing campaign to alert rim wheel serving personnel of the industry accepted procedures for servicing multi-piece rim wheels.

Reprints of the charts are available through the Occupational Safety and Health Administration (OSHA) area offices. The address and telephone number of the nearest OSHA area office can be obtained by looking in the local telephone directory under U.S. Government, U.S. Department of Labor, Occupational Safety and Health Administration. Single copies are available without charge.

Individuals, establishments and other organizations desiring multiple copies of these charts may order them from the Publications Office, U.S. Department of Labor, Room N4101, Washington, D.C. 20210. Telephone: (202) 523-9667.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 84-17-099 (Order 84-18), § 296-24-21713, filed 8/21/84.]

WAC 296-24-230 Powered industrial trucks.

[Order 73-5, § 296-24-230, filed 5/9/73 and Order 73-4, § 296-24-230, filed 5/7/73.]

WAC 296-24-23001 Definition. These definitions are applicable to all sections of this chapter containing WAC 296-24-230 in the section number. As used in those sections, the term, "approved truck" or "approved industrial truck" means a truck that is listed or approved for fire safety purposes for the intended use by a nationally recognized testing laboratory, e.g. Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp., using nationally recognized testing standards.

[Order 74-27, § 296-24-23001, filed 5/7/74; Order 73-5, § 296-24-23001, filed 5/9/73 and Order 73-4, § 296-24-23001, filed 5/7/73.]

WAC 296-24-23003 General requirements. These requirements are applicable to all sections of this chapter containing the WAC 296-24-230 in the section number.

(1) This section contains safety requirements relating to fire protection design, maintenance, and use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks, powered by electric motors or internal combustion engines. This section does not apply to compressed gas-operated industrial trucks, nor to farm vehicles, to vehicles intended primarily for earth moving or over-the-road hauling.

(2) All new powered industrial trucks acquired and used by an employer after the effective date of these standards shall meet the design and construction requirements for powered industrial trucks established in the "American National Standard for Powered Industrial Trucks, Part II, ANSI B56.1-1969," except for vehicles intended primarily for earth moving or over-the-road hauling.

(3) Approved trucks shall bear a label or some other identifying mark indicating approval by the testing laboratory as meeting the specifications and requirements of ANSI B56.1-1969.

(4) Modifications and additions which affect capacity and safe operation shall not be performed by the customer or user without manufacturers prior written approval. Capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

(5) If the truck is equipped with front-end attachments other than factory installed attachments, it shall be marked to identify the attachments and show the approximate weight of the truck and attachment combination at maximum elevation with load laterally centered.

(6) The user shall see that all nameplates and markings are in place and are maintained in a legible condition.

[Order 76-6, § 296-24-23003, filed 3/1/76; Order 74-27, § 296-24-23003, filed 5/7/74; Order 73-5 § 296-24-23003, filed 5/9/73 and Order 73-4, § 296-24-23003, filed 5/7/73.]

WAC 296-24-23005 Designations. For the purpose of this standard there are eleven different designations of industrial trucks or tractors as follows: D, DS, DY, E, ES, EE, EX, G, GS, LP, and LPS.

(1) The D designated units are units similar to the G units except that they are diesel engine powered instead of gasoline engine powered.

(2) The DS designated units are diesel powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where a D unit may not be considered suitable.

(3) The DY designated units are diesel powered units that have all the safeguards of the DS units and in addition do not have any electrical equipment, including the ignition, and are equipped with temperature limitation features.

(4) The E designated units are electrically powered units that have minimum acceptable safeguards against inherent fire hazards.

(5) The ES designated units are electrically powered units that, in addition to all of the requirements for the E units, are provided with additional safeguards to the electrical system to prevent emission of hazardous sparks and to limit surface temperatures. They may be used in some locations where the use of an E unit may not be considered suitable.

(6) The EE designated units are electrically powered units that have, in addition to all of the requirements for the E and ES units, the electric motors and all other electrical equipment completely enclosed. In certain locations the EE unit may be used where the use of an E and ES unit may not be considered suitable.

(7) The EX designated units are electrically powered units that differ from E, ES, or EE units in that the electrical fittings and equipment are so designed, constructed and assembled that the units may be used in certain atmospheres containing flammable vapors or dusts.

(8) The G designated units are gasoline powered units having minimum acceptable safeguards against inherent fire hazards.

(9) The GS designated units are gasoline powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. They may be used in some locations where the use of a G unit may not be considered suitable.

(10) The LP designated unit is similar to the G unit except that liquefied petroleum gas is used for fuel instead of gasoline.

(11) The LPS designated units are liquefied petroleum gas powered units that are provided with additional safeguards to the exhaust, fuel, and electrical systems. They may be used in some locations where the use of an LP unit may not be considered suitable.

(12) The atmosphere or location shall have been classified as to whether it is hazardous or nonhazardous prior to the consideration of industrial trucks being used therein and the type of industrial truck required shall be as provided in WAC 296-24-23009 for such location.

[Order 73-5, § 296-24-23005, filed 5/9/73 and Order 73-4, § 296-24-23005, filed 5/7/73.]

WAC 296-24-23007 Designated locations. (1) The industrial trucks specified under (2) of this section are the minimum types required but industrial trucks having greater safeguards may be used if desired.

(2) For specific areas of use see Table N-1 following this section which tabulates the information contained in this section. References in parentheses are to the corresponding classification as used in the National Electrical Code NFPA No. 70-1971; ANSI Standard CI-1971 (Rev. of 1968) for the convenience of persons familiar with those classifications.

(a) Power-operated industrial trucks shall not be used in atmospheres containing hazardous concentration of acetylene, butadiene, ethylene oxide, hydrogen (or gases or vapors equivalent in hazard to hydrogen, such as manufactured gas), propylene oxide, acetaldehyde, cyclopropane, diethyl ether, ethylene, isoprene, or unsymmetrical dimenthyl hydrazine (UDMH).

(i) Power-operated industrial trucks shall not be used in atmospheres containing hazardous concentrations of metal dust, including aluminum, magnesium, and their commercial alloys, other metals of similarly hazardous characteristics, or in atmospheres containing carbon black, coal or coke dust except approved power-operated industrial trucks designated as EX may be used in such atmospheres.

(ii) In atmospheres where dust of magnesium, aluminum or aluminum bronze may be present, fuses, switches, motor controllers, and circuit breakers of trucks shall have enclosures specifically approved for such locations.

(b) Only approved power-operated industrial trucks designated as EX may be used in atmospheres containing acetone, acrylonitrile, alcohol, ammonia, benzine, bensol, butane, ethylene dichloride, gasoline, hexane, lacquer solvent vapors, naphtha, natural gas, propane, propylene, styrene, vinyl acetate, vinyl chloride, or xylenes in quantities sufficient to produce explosive or ignitable mixtures and where such concentrations of these gases or vapors exist continuously, intermittently or periodically under normal operating conditions or may exist frequently because of repair, maintenance operations, leakage, breakdown or faulty operation of equipment.

(c) Power-operated industrial trucks designated as DY, EE, or EX may be used in locations where volatile flammable liquids or flammable gases are handled, processed or used, but in which the hazardous liquids, vapors or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in the case of abnormal operation of equipment; also in locations in which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation but which might become hazardous through failure or abnormal operation of the ventilating equipment; or in locations which are adjacent to Class I, Division 1 locations, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clear air, and effective safeguards against ventilation failure are provided.

(d) In locations used for the storage of hazardous liquids in sealed containers or liquefied or compressed gases in containers, approved power-operated industrial trucks designated as DS, ES, GS, or LPS may be used. This classification includes locations where volatile flammable liquids or flammable gases or vapors are used, but which, would become hazardous only in case of an accident or of some unusual operation condition. The quantity of hazardous material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions or fires are all factors that should receive consideration in determining whether or not the DS or DY, ES, EE, GS, LPS designated truck possesses sufficient safeguards for the location. Piping without valves, checks, meters and similar devices would not ordinarily be deemed to introduce a hazardous condition even though used for hazardous liquids or gases. Locations used for the storage of hazardous liquids or of liquefied or compressed gases in sealed containers would not normally be considered hazardous unless subject to other hazardous conditions also.

(i) Only approved power–operated industrial trucks designated as EX shall be used in atmospheres in which combustible dust is or may be in suspension continuously, intermittently, or periodically under normal operating conditions, in quantities sufficient to produce explosive or ignitable mixtures, or where mechanical failure or abnormal operation of machinery or equipment might cause such mixtures to be produced.

(ii) The EX classification usually includes the working areas of grain handling and storage plants, room containing grinders or pulverizers, cleaners, graders, scalpers, open conveyors or spouts, open bins or hoppers, mixers, or blenders, automatic or hopper scales, packing machinery, elevator heads and boots, stock distributors, dust and stock collectors (except all–metal collectors vented to the outside), and all similar dust producing machinery and equipment in grain processing plants, starch plants, sugar pulverizing plants, malting plants, hay grinding plants, and other occupancies of similar nature; coal pulverizing plants (except where the pulverizing equipment is essentially dust tight); all working areas where metal dusts and powders are produced, processed, handled, packed, or stored (except in tight containers); and other similar locations where combustible dust may, under normal operating conditions, be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

(e) Only approved power–operated industrial trucks designated as DY, EE, or EX shall be used in atmospheres in which combustible dust will not normally be in suspension in the air or will not be likely to be thrown into suspension by the normal operation of equipment or apparatus in quantities sufficient to produce explosive or ignitable mixtures but where deposits or accumulations of such dust may be ignited by arcs or sparks originating in the truck.

(f) Only approved power–operated industrial trucks designated as DY, EE, or EX shall be used in locations which are hazardous because of the presence of easily ignitible fibers or flyings but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures.

(g) Only approved power–operated industrial trucks designated as DS, DY, ES, EE, EX, GS, or LPS shall be used in locations where easily ignitible fibers are stored or handled including outside storage, but are not being processed or manufactured. Industrial trucks designated as E, which have been previously used in these locations may be continued in use.

(h) On piers and wharves handling general cargo, any approved power–operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements for these types may be used.

(i) If storage warehouses and outside storage locations are hazardous only the approved power–operated industrial truck specified for such locations in WAC 296–24–23007(2) shall be used. If not classified as hazardous, any approved power–operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements for these types may be used.

(j) If general industrial or commercial properties are hazardous, only approved power–operated industrial trucks specified for such locations in this WAC 296–24–23007 shall be used. If not classified as hazardous, any approved power–operated industrial truck designated as Type D, E, G, or LP may be used, or trucks which conform to the requirements of these types may be used.

TABLE N–1

SUMMARY TABLE ON USE OF INDUSTRIAL TRUCKS IN VARIOUS LOCATIONS

(TABLE N–1: Part 1--Unclassified & Class I)

Classes	Unclassified	Class I locations			
Description of classes	Locations not possessing atmospheres as described in other columns.	Locations in which flammable gases or vapors are, or may be, present in the air in quantities sufficient to produce explosive or ignitible mixtures.			
Groups in classes	None	A	B	C	D
Examples of locations or atmospheres in classes and groups	Piers and wharves inside and outside general storage general industrial or commercial properties	Acetylene	Hydrogen	Ethyl ether	Gasoline Naphtha Alcohols Acetone Lacquer solvent Benzene
		1			2
Divisions (nature of hazardous conditions)	None	Above condition exists continuously, intermittently, or periodically under normal operating conditions.			Above condition may occur accidentally as due to a puncture of a storage drum.

(TABLE N–1: Part 2--Class II & III)

Classes	Class II locations			Class III locations	
Description of classes	Locations which are hazardous because of the presence of combustible dust.			Locations where easily ignitible fibers or flyings are present but not likely to be in suspension in quantities sufficient to produce ignitible mixtures.	
Groups in classes	E	F	G	None	
Examples of locations or atmospheres in classes and groups	Metal dust	Carbon black Coal dust Coke dust	Grain dust Flour dust Starch dust Organic dust	Baled waste, cocoa fiber, cotton, excelsior, hemp, istle, jute, kapok, oakum, sisal, Spanish moss, synthetic fibers, tow.	
	1		2	1	2
Divisions (nature of hazardous conditions)	Explosive mixture may be present under normal operating conditions, or where		Explosive mixture not normally present, but where deposits of dust may cause heat	Locations in which easily ignitible fibers or materials producing combustible flyings are	Locations in which easily ignitible fibers are stored or handled (except in the process of

(TABLE N-1: Part 2--Class II & III)

Classes	Class II locations		Class III locations	
	failure of equipment may cause the condition to exist simultaneously with arcing or sparking of electrical equipment, or where dusts of an electrically conducting nature may be present.	rise in electrical equipment, or where such deposits may be ignited by arcs or sparks from electrical equipment.	handled, manufactured, or used.	manufacture).

Authorized uses of trucks by types in groups of classes and divisions

(TABLE N-1: Part 3--
Groups in classes, None--A, B, C, and D)

Groups in classes	None	A	B	C	D	A	B	C	D
Types of trucks authorized:									
Diesel:									
Type D	D**								
Type DS									DS
Type DY									DY
Electric:									
Type E	E**								
Type ES									ES
Type EE									EE
Type EX					EX				EX
Gasoline:									
Type G	G**								
Type GS									GS
LP-Gas:									
Type LP	LP**								
Type LPS									LPS
Paragraph Ref. in No. 505	210.211	201(a)		203 (a)		209(a)			204 (a), (b)

**Trucks conforming to these types may also be used—see WAC 296-24-23007 (2)(h) and (j).
References in parentheses are to the corresponding classification as used in the National Electrical Code (NFPA No. 70, ANSI Standard CI-1968) for the convenience of persons familiar with those classifications.

(TABLE N-1: Part 4--
Groups in class--E, F, G, and None)

Groups in classes	E	F	G	E	F	G	None	None
Types of trucks authorized:								
Diesel:								
Type D								
Type DS						DS		DS
Type DY						DY	DY	DY
Electric:								
Type E								E
Type ES						ES		ES
Type EE						EE	EE	EE
Type EX		EX	EX			EX	EX	EX
Gasoline:								
Type G								
Type GS						GS		GS
LP-Gas:								
Type LP								
Type LPS						LPS		LPS
Paragraph Ref. in No. 505	202(a)		205(a)	209(a)		206 (a), (b)	207(a)	208(a)

**Trucks conforming to these types may also be used — see WAC 296-24-23007 (2)(h) and (j).
References in parentheses are to the corresponding classification as used in the National Electrical Code (NFPA No. 70, ANSI Standard CI-1968) for the convenience of persons familiar with those classifications.

[Order 73-5, § 296-24-23007, filed 5/9/73 and Order 73-4, § 296-24-23007, filed 5/7/73.]

WAC 296-24-23009 Converted industrial trucks. Power-operated industrial trucks that have been originally approved for the use of gasoline for fuel, when converted to the use of liquefied petroleum gas fuel in accordance with WAC 296-24-23035, may be used in those locations where G, GS or LP, and LPS designated trucks have been specified in the preceding sections.

[Order 73-5, § 296-24-23009, filed 5/9/73 and Order 73-4, § 296-24-23009, filed 5/7/73.]

WAC 296-24-23011 Safety guards. (1) High lift rider trucks shall be fitted with an overhead guard manufactured in accordance with WAC 296-24-23003(2), unless operating conditions do not permit.

(2) If the type of load presents a hazard, the user shall equip fork trucks with a vertical load backrest extension manufactured in accordance with WAC 296-24-23003(2).

[Order 73-5, § 296-24-23011, filed 5/9/73 and Order 73-4, § 296-24-23011, filed 5/7/73.]

WAC 296-24-23013 Fuel handling and storage. (1) The storage and handling of liquid fuels such as gasoline and diesel fuel shall be in accordance with NFPA Flammable and Combustible Liquids Code (NFPA No. 30-1969).

(2) The storage and handling of liquefied petroleum gas fuel shall be in accordance with NFPA Storage and Handling of Liquefied Petroleum Gases (NFPA No. 58-1969).

[Order 73-5, § 296-24-23013, filed 5/9/73 and Order 73-4, § 296-24-23013, filed 5/7/73.]

WAC 296-24-23015 Changing and charging storage batteries. (1) Battery charging installations shall be located in areas designated for that purpose.

(2) Facilities shall be provided for flushing and neutralizing spilled electrolyte, for fire protection, for protecting charging apparatus from damage by trucks, and for adequate ventilation for dispersal of fumes from gassing batteries.

(3) When racks are used for support of batteries, they should be made of materials nonconductive to spark generation or be coated or covered to achieve this objective.

(4) A conveyor, overhead hoist, or equivalent material handling equipment shall be provided for handling batteries.

(5) Reinstalled batteries shall be properly positioned and secured in the truck.

(6) A carboy tilter or siphon shall be provided for handling electrolyte.

(7) When charging batteries, acid shall be poured into water; water shall not be poured into acid.

(8) Trucks shall be properly positioned and brake applied before attempting to change or charge batteries.

(9) When charging batteries, the vent caps should be kept in place to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

(10) Smoking shall be prohibited in the charging area.

(11) Precautions shall be taken to prevent open flames, sparks, or electric arcs in battery charging areas.

(12) Tools and other metallic objects shall be kept away from the top of uncovered batteries.

[Order 73-5, § 296-24-23015, filed 5/9/73 and Order 73-4, § 296-24-23015, filed 5/7/73.]

WAC 296-24-23017 Lighting for operating areas. (1) Controlled lighting of adequate intensity should be provided in operating areas. (See American National Standard Practice for Industrial Lighting, All.1-1965 (R1970).)

(2) Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.

[Order 73-5, § 296-24-23017, filed 5/9/73 and Order 73-4, § 296-24-23017, filed 5/7/73.]

WAC 296-24-23019 Control of noxious gases and fumes. (1) Concentration levels of carbon monoxide gas created by powered industrial truck operations shall not exceed the levels specified in WAC 296-62-075 (general occupational health standards).

(2) Questions concerning degree of concentration and methods of sampling to ascertain the conditions should be referred to a qualified industrial hygienist.

[Order 73-5, § 296-24-23019, filed 5/9/73 and Order 73-4, § 296-24-23019, filed 5/7/73.]

WAC 296-24-23021 Dockboards (bridge plates). (1) Portable and powered dockboards shall be strong enough to carry the load imposed on them.

(2) Portable dockboards shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.

(3) Powered dockboards shall be designed and constructed in accordance with Commercial Standard CS202-56 (1956) "Industrial Lifts and Hinged Loading Ramps" published by the U.S. Department of Commerce.

(4) Handholds, or other effective means, shall be provided on portable dockboards to permit safe handling.

(5) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

[Order 73-5, § 296-24-23021, filed 5/9/73 and Order 73-4, § 296-24-23021, filed 5/7/73.]

WAC 296-24-23023 Trucks and railroad cars. (1) The brakes of highway trucks shall be set and wheel chocks placed under the rear wheels to prevent the trucks from rolling while they are boarded with powered industrial trucks.

(2) Wheel stops or other recognized positive protection shall be provided to prevent railroad cars from moving during loading or unloading operations.

(3) Fixed jacks may be necessary to support a semitrailer and prevent up-ending during the loading or unloading when the trailer is not coupled to a tractor.

(4) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

[Order 73-5, § 296-24-23023, filed 5/9/73 and Order 73-4, § 296-24-23023, filed 5/7/73.]

WAC 296-24-23025 Operator training. Only trained and authorized operators shall be permitted to operate a powered industrial truck. Methods shall be devised to train operators in the safe operation of powered industrial trucks.

[Order 73-5, § 296-24-23025, filed 5/9/73 and Order 73-4, § 296-24-23025, filed 5/7/73.]

WAC 296-24-23027 Truck operations. (1) Trucks shall not be driven up to anyone standing in front of a bench or other fixed object.

(2) No person shall be allowed to stand or pass under the elevated portion of any truck, whether loaded or empty.

(3) Unauthorized personnel shall not be permitted to ride on powered industrial trucks. A safe place to ride shall be provided where riding of trucks is authorized.

(4) The employer shall prohibit arms or legs from being placed between the uprights of the mast or outside the running lines of the truck.

(5) When leaving a powered industrial truck unattended, load engaging means shall be fully lowered, controls shall be neutralized, power shall be shut off, and brakes set. Wheels blocked if the truck is parked on an incline.

(a) A powered industrial truck is unattended when the operator is 25 feet or more away from the vehicle which remains in his view, or whenever the operator leaves the vehicle and it is not in his view.

(b) When the operator of an industrial truck is dismounted and within 25 feet of the truck still in his view, the load engaging means shall be fully lowered, controls neutralized, and the brakes set to prevent movement.

(6) A safe distance shall be maintained from the edge of ramps or platforms while on any elevated dock, or platform or freight car. Trucks shall not be used for opening or closing freight doors.

(7) Brakes shall be set and wheel blocks shall be in place to prevent movement of trucks, trailers, or railroad cars while loading or unloading. Fixed jacks may be necessary to support a semitrailer during loading or unloading when the trailer is not coupled to a tractor. The flooring of trucks, trailers, and railroad cars shall be checked for breaks and weakness before they are driven onto.

(8) There shall be sufficient headroom under overhead installations, lights, pipes, sprinkler system, etc.

(9) An overhead guard shall be used as protection against falling objects. It should be noted that an overhead guard is intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application, but not to withstand the impact of a falling capacity load.

(10) A load backrest extension shall be used whenever necessary to minimize the possibility of the load or part of it from falling rearward.

(11) Only approved industrial trucks shall be used in hazardous locations.

(12) Whenever a truck is equipped with vertical only, or vertical and horizontal controls elevatable with the lifting carriage or forks for lifting personnel, the following additional precautions shall be taken for the protection of personnel being elevated.

(a) Use of a safety platform firmly secured to the lifting carriage and/or forks.

(b) Means shall be provided whereby personnel on the platform can shut off power to the truck.

(c) Such protection from falling objects as indicated necessary by the operating conditions shall be provided.

(13) Using forklifts as elevated work platforms. A platform or structure built specifically for hoisting persons may be used providing the following requirements are complied with: (a) The structure must be securely attached to the forks and shall have standard guardrails and toeboards installed on all sides.

(b) The hydraulic system shall be so designed that the lift mechanism will not drop faster than 135 feet per minute in the event of a failure in any part of the system. Forklifts used for elevating work platforms shall be identified that they are so designed.

(c) A safety strap shall be installed or the control lever shall be locked to prevent the boom from tilting.

(d) An operator shall attend the lift equipment while workers are on the platform.

(e) The operator shall be in the normal operating position while raising or lowering the platform.

(f) The vehicle shall not travel from point to point while workers are on the platform except that inching or maneuvering at very slow speed is permissible.

(g) The area between workers on the platform and the mast shall be adequately guarded to prevent contact with chains or other shear points.

(14) Fire aisles, access to stairways, and fire equipment shall be kept clear.

[Order 74-27, § 296-24-23027, filed 5/7/74; Order 73-5, § 296-24-23027, filed 5/9/73 and Order 73-4, § 296-24-23027, filed 5/7/73.]

WAC 296-24-23029 Traveling. (1) All traffic regulations shall be observed, including authorized plant speed limits. A safe distance shall be maintained approximately three truck lengths from the truck ahead, and the truck shall be kept under control at all times.

(2) The right of way shall be yielded to ambulances, fire trucks, or other vehicles in emergency situations.

(3) Other trucks traveling in the same direction at intersections, blind spots, or other dangerous locations shall not be passed.

(4) The driver shall be required to slow down and sound the horn at cross aisles and other locations where vision is obstructed. If the load being carried obstructs forward view, the driver shall be required to travel with the load trailing.

(5) Railroad tracks shall be crossed diagonally wherever possible. Parking closer than 8 feet from the center of railroad tracks is prohibited.

(6) The driver shall be required to look in the direction of, and keep a clear view of the path of travel.

(7) Grades shall be ascended or descended slowly.

(a) When ascending or descending grades in excess of 10 percent, loaded trucks shall be driven with the load upgrade.

(b) Unloaded trucks should be operated on all grades with the load engaging means downgrade.

(c) On all grades the load and load engaging means shall be tilted back if applicable, and raised only as far as necessary to clear the road surface.

(8) Under all travel conditions the truck shall be operated at a speed that will permit it to be brought to a stop in a safe manner.

(9) Stunt driving and horseplay shall not be permitted.

(10) The driver shall be required to slow down for wet and slippery floors.

(11) Dockboard or bridgeplates, shall be properly secured before they are driven over. Dockboard or bridgeplates shall be driven over carefully and slowly and their rated capacity never exceeded.

(12) Elevators shall be approached slowly, and then entered squarely after the elevator car is properly leveled. Once on the elevator, the controls shall be neutralized, power shut off, and the brakes set.

(13) Motorized hand trucks must enter elevator or other confined areas with load end forward.

(14) Running over loose objects on the roadway surface shall be avoided.

(15) While negotiating turns, speed shall be reduced to a safe level, by means of turning the hand steering

wheel in a smooth, sweeping motion. Except when maneuvering at a very low speed, the hand steering wheel shall be turned at a moderate, even rate.

[Order 73-5, § 296-24-23029, filed 5/9/73 and Order 73-4, § 296-24-23029, filed 5/7/73.]

WAC 296-24-23031 Loading. (1) Only stable or safely arranged loads shall be handled. Caution shall be exercised when handling off-center loads which cannot be centered.

(2) Only loads within the rated capacity of the truck shall be handled.

(3) The long or high (including multiple-tiered) loads which may affect capacity shall be adjusted.

(4) When attachments are used, particular care should be taken in securing, manipulating, positioning, and transporting the load. Trucks equipped with attachments shall be operated as partially loaded trucks when not handling a load.

(5) A load engaging means shall be placed under the load as far as possible; the mast shall be carefully tilted backward to stabilize the load.

(6) Extreme care shall be used when tilting the load forward or backward, particularly when high tiering. Tilting forward with load engaging means elevated shall be prohibited except to pick up a load. An elevated load shall not be tilted forward except when the load is in a deposit position over a rack or stack. When stacking or tiering, only enough backward tilt to stabilize the load shall be used.

[Order 73-5, § 296-24-23031, filed 5/9/73 and Order 73-4, § 296-24-23031, filed 5/7/73.]

WAC 296-24-23033 Operation of the truck. (1) If at any time a powered industrial truck is found to be in need of repair, defective, or in any way unsafe, the truck shall be taken out of service until it has been restored to safe operating condition.

(2) Fuel tanks shall not be filled while the engine is running. Spillage shall be avoided.

(3) Spillage of oil or fuel shall be carefully washed away or completely evaporated and the fuel tank cap replaced before restarting engine.

(4) No truck shall be operated with a leak in the fuel system until the leak has been corrected.

(5) Open flames shall not be used for checking electrolyte level in storage batteries or gasoline level in fuel tanks.

[Order 73-5, § 296-24-23033, filed 5/9/73 and Order 73-4, § 296-24-23033, filed 5/7/73.]

WAC 296-24-23035 Maintenance of industrial trucks. (1) Any power operated industrial truck not in safe operating condition shall be removed from service. All repairs shall be made by authorized personnel.

(2) No repairs shall be made in Classes I, II, and III locations.

(3) Those repairs to the fuel and ignition systems of industrial trucks which involve fire hazards shall be conducted only in locations designated for such repairs.

(4) Trucks in need of repairs to the electrical system shall have the battery disconnected prior to such repairs.

(5) All parts of any such industrial truck requiring replacement shall be replaced only by parts equivalent as to safety with those used in the original design.

(6) Industrial trucks shall not be altered so that the relative positions of the various parts are different from what they were when originally received from the manufacturer, nor shall they be altered either by the addition of extra parts not provided by the manufacturer or by the elimination of any parts, except as provided in WAC 296-24-23003. Additional counterweighting of fork trucks shall not be done unless approved by the truck manufacturer.

(7) Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examination shall be made at least daily.

Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift. Defects when found shall be immediately reported and corrected.

(8) Water mufflers shall be filled daily or as frequently as is necessary to prevent depletion of the supply of water below 75 percent of the filled capacity. Vehicles with mufflers having screens or other parts that may become clogged shall not be operated while such screens or parts are clogged. Any vehicle that emits hazardous sparks or flames from the exhaust system shall immediately be removed from service, and not returned to service until the cause for the emission of such sparks and flames has been eliminated.

(9) When the temperature of any part of any truck is found to be in excess of its normal operating temperature, thus creating a hazardous condition, the vehicle shall be removed from service and not returned to service until the cause for such overheating has been eliminated.

(10) Industrial trucks shall be kept in a clean condition, free of lint, excess oil, and grease. Noncombustible agents should be used for cleaning trucks. Low flash point (below 100°F.) solvents shall not be used. High flash point (at or above 100°F.) solvents may be used. Precautions regarding toxicity, ventilation, and fire hazard shall be consonant with the agent or solvent used.

(11) Where it is necessary to use antifreeze in the engine cooling system, only those products having glycol base shall be used.

(12) Industrial trucks originally approved for the use of gasoline for fuel may be converted to liquefied petroleum gas fuel provided the complete conversion results in a truck which embodies the features specified for LP or LPS designated trucks. Such conversion equipment shall be approved. The description of the component parts of this conversion system and the recommended method of installation on specific trucks are contained in the "listed by report."

[Order 73-5, § 296-24-23035, filed 5/9/73 and Order 73-4, § 296-24-23035, filed 5/7/73.]

WAC 296-24-233 Motor vehicle trucks and trailers. (1) Only qualified drivers shall be permitted to operate motor vehicle trucks, and shall possess a current motor vehicle operator's license.

(2) Motor vehicle trucks must be equipped with brakes which will safely hold the maximum load on maximum grades.

(3) Trailers must be equipped with good, workable air brakes, or other type of brake equipment approved by the state commission on equipment. Air must be cut into the trailer brake system at the time that the trailer is coupled to the truck.

(4) Brakes on trucks and trailers must be tested before equipment descends a steep grade.

(5) Truck drivers shall at all times operate equipment at a safe speed for roadway conditions.

(6) Safe methods of loading and unloading motor vehicle trucks and trailers shall be observed at all times.

(7) To prevent accidents during the backing of trucks where vision is obstructed, a signalman shall be stationed at a point giving him a clear view of the rear of the truck and the operator of the truck at all times.

(8) Truck drivers shall sound their horn before starting to back, and shall sound the horn intermittently during the entire backing operation.

(9) Dump trucks shall have a device installed on the frame which will be of sufficient strength to hold the bed in the raised position when employees are working in an exposed position underneath.

(10) All parts and accessories of trucks and trailers shall be kept in good repair and safe condition. Tires worn beyond the point of safety shall not be used.

(11) All motor vehicle trucks and trailers shall be equipped with standard lights, horn, flags, flares, etc., to conform to the state of Washington motor vehicles laws.

(12) All loads transported on trucks and/or trucks and trailers shall be properly secured and distributed, and limited to a safe operating load for the condition of the roadway, and the capacity of the bridges, trestles, and other structures.

(13) Precautions to be taken while inflating tires. Unmounted split-rim wheels shall be placed in a safety cage or other device shall be used which will prevent a split-rim from striking the worker if it should dislodge while the tire is being inflated.

(14) Trucks parked on an incline shall have the steered wheels turned into the curb and shall have at least one "driver" wheel chocked on each side, independent of the braking system.

(15) Motor vehicles used regularly for transportation of workmen shall be well equipped, covered against the weather and maintained in good mechanical condition at all times.

(a) Seats, which shall be properly secured, shall be provided in each vehicle to accommodate the total number of workers normally transported. Where it becomes necessary under emergency conditions to transport more workers than the seating capacity of the truck will accommodate, all workers not having seats shall ride within the vehicle. Under no circumstances shall workers ride on fenders or running boards of the vehicle.

(b) No worker shall ride in or on any vehicle with his legs hanging over the end or sides. A safety bar should be placed across the rear opening of all manhaul trucks which are not equipped with tail gates.

(c) Vehicles shall be equipped with compartments or screen of such strength to retain sharp tools which could present a hazard to employees being transported.

(d) All dump-trucks used to transport workers shall be equipped with an adequate safety chain or locking device which will eliminate the possibility of the body of the truck being raised while workers are riding in the truck.

(e) Explosives or highly inflammable materials shall not be carried in or on any vehicle while it is used to transport workers.

(f) Exhaust systems shall be installed and maintained in proper condition, and shall be so designed as to eliminate the exposure of the workers to the exhaust gases and fumes.

(g)(i) The number of persons allowed in the cab of a single bench seat crew truck shall not exceed two in addition to the driver. Crew trucks designed and constructed with additional seating capacity behind the normal driver's seat may carry additional passengers in the seating area behind the driver's seat. Crew trucks with bucket-type seats may carry only the number of passengers for which the bucket seats are provided. In any seating arrangement, the driver must be able to maintain full freedom of motion. Additionally, the number of passengers or seating arrangement shall not obstruct the driver's normal vision.

(ii) When trucks are designed and constructed with larger than normal seating capacity in the front seat, the total number of passengers may be increased provided that the operator's vision and control functions, as required in (15)(g)(i), are maintained.

(h) All enclosed crew trucks shall have an emergency exit in addition to the regular entrance.

(i) Trucks used for hauling gravel shall not be used as crew trucks unless they are equipped as follows:

(i) Steps in proper place or places.

(ii) Wooden floors.

(iii) Seats are securely fastened.

(iv) Truck is properly covered.

(v) All other general regulations covering crew trucks are fully conformed with.

(j) Half-ton vehicles shall haul not more than six persons including driver. Three-quarter-ton vehicles shall haul not more than eight persons including driver.

(k) All vehicles carrying crews shall be equipped with stretchers and fire extinguishers.

(l) No heating units in which there are open fires shall be used in vehicles transporting crews.

[Order 76-29, § 296-24-233, filed 9/30/76; Order 76-6, § 296-24-233, filed 3/1/76; Order 75-11, § 296-24-233, filed 4/4/75; Order 74-27, § 296-24-233, filed 5/7/74; Order 73-5, § 296-24-233, filed 5/9/73 and Order 73-4, § 296-24-233, filed 5/7/73.]

WAC 296-24-235 Overhead and gantry cranes.

[Order 73-5, § 296-24-235, filed 5/9/73 and Order 73-4, § 296-24-235, filed 5/7/73.]

WAC 296-24-23501 Definitions. (1) A "crane" is a machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism and integral part of the machine. Cranes whether fixed or mobile are driven manually or by power.

(2) An "automatic crane" is a crane which when activated operates through a preset cycle or cycles.

(3) A "cab-operated crane" is a crane controlled by an operator in a cab located on the bridge or trolley.

(4) "Cantilever gantry crane" means a gantry or semigantry crane in which the bridge girders or trusses extend transversely beyond the crane runway on one or both sides.

(5) "Floor-operated crane" means a crane which is pendant or nonconductive rope controlled by an operator on the floor or an independent platform.

(6) "Gantry crane" means a crane similar to an overhead crane except that the bridge for carrying the trolley or trolleys is rigidly supported on two or more legs running on fixed rails or other runway.

(7) "Hot metal handling crane" means an overhead crane used for transporting or pouring molten material.

(8) "Overhead crane" means a crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.

(9) "Power-operated crane" means a crane whose mechanism is driven by electric, air, hydraulic, or internal combustion means.

(10) A "pulpit-operated crane" is a crane operated from a fixed operator station not attached to the crane.

(11) A "remote-operated crane" is a crane controlled by an operator not in a pulpit or in the cab attached to the crane, by any method other than pendant or rope control.

(12) A "semigantry crane" is a gantry crane with one end of the bridge rigidly supported on one or more legs that run on a fixed rail or runway, the other end of the bridge being supported by a truck running on an elevated rail or runway.

(13) "Storage bridge crane" means a gantry type crane of long span usually used for bulk storage of material; the bridge girders or trusses are rigidly or nonrigidly supported on one or more legs. It may have one or more fixed or hinged cantilever ends.

(14) "Wall crane" means a crane having a jib with or without trolley and supported from a side wall or line of columns of a building. It is a traveling type and operates on a runway attached to the side wall or columns.

(15) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(16) "ANSI" means the American National Standards Institute.

(17) An "auxiliary hoist" is a supplemental hoisting unit of lighter capacity and usually higher speed than provided for the main hoist.

(18) A "brake" is a device used for retarding or stopping motion by friction or power means.

(19) A "drag brake" is a brake which provides retarding force without external control.

(20) A "holding brake" is a brake that automatically prevents motion when power is off.

(21) "Bridge" means that part of a crane consisting of girders, trucks, end ties, footwalks, and drive mechanism which carries the trolley or trollies.

(22) "Bridge travel" means the crane movement in a direction parallel to the crane runway.

(23) A "bumper" (buffer) is an energy absorbing device for reducing impact when a moving crane or trolley reaches the end of its permitted travel; or when two moving cranes or trolleys come in contact.

(24) The "cab" is the operator's compartment on a crane.

(25) "Clearance" means the distance from any part of the crane to a point of the nearest obstruction.

(26) "Collectors" (current) are contacting devices for collecting current from runway or bridge conductors.

(27) "Conductors, bridge" are the electrical conductors located along the bridge structure of a crane to provide power to the trolley.

(28) "Conductors, runway" (main) are the electrical conductors located along a crane runway to provide power to the crane.

(29) The "control braking means" is a method of controlling crane motor speed when in an overhauling condition.

(30) "Countertorque" means a method of control by which the power to the motor is reversed to develop torque in the opposite direction.

(31) "Dynamic" means a method of controlling crane motor speeds when in the overhauling condition to provide a retarding force.

(32) "Regenerative" means a form of dynamic braking in which the electrical energy generated is fed back into the power system.

(33) "Mechanical" means a method of control by friction.

(34) "Controller, spring return" means a controller which when released will return automatically to a neutral position.

(35) "Designated" means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(36) A "drift point" means a point on a travel motion controller which releases the brake while the motor is not energized. This allows for coasting before the brake is set.

(37) The "drum" is the cylindrical member around which the ropes are wound for raising or lowering the load.

(38) An "equalizer" is a device which compensates for unequal length or stretch of a rope.

(39) "Exposed" means capable of being contacted inadvertently. Applied to hazardous objects not adequately guarded or isolated.

(40) "Fail-safe" means a provision designed to automatically stop or safely control any motion in which a malfunction occurs.

(41) "Footwalk" means the walkway with handrail, attached to the bridge or trolley for access purposes.

(42) A "hoist" is an apparatus which may be a part of a crane, exerting a force for lifting or lowering.

(43) "Hoist chain" means the load bearing chain in a hoist.

Note: Chain properties do not conform to those shown in ANSI B30.9–1971, Safety Code for Slings.

(44) "Hoist motion" means that motion of a crane which raises and lowers a load.

(45) "Load" means the total superimposed weight on the load block or hook.

(46) The "load block" is the assembly of hook or shackle, swivel, bearing, sheaves, pins, and frame suspended by the hoisting rope.

(47) "Magnet" means an electromagnetic device carried on a crane hook to pick up loads magnetically.

(48) "Main hoist" means the hoist mechanism provided for lifting the maximum rated load.

(49) A "man trolley" is a trolley having an operator's cab attached thereto.

(50) "Rated load" means the maximum load for which a crane or individual hoist is designed and built by the manufacturer and shown on the equipment nameplate(s).

(51) "Rope" refers to wire rope, unless otherwise specified.

(52) "Running sheave" means a sheave which rotates as the load block is raised or lowered.

(53) "Runway" means an assembly of rails, beams, girders, brackets, and framework on which the crane or trolley travels.

(54) "Side pull" means that portion of the hoist pull acting horizontally when the hoist lines are not operated vertically.

(55) "Span" means the horizontal distance center to center of runway rails.

(56) "Standby crane" means a crane which is not in regular service but which is used occasionally or intermittently as required.

(57) A "stop" is a device to limit travel of a trolley or crane bridge. This device normally is attached to a fixed structure and normally does not have energy absorbing ability.

(58) A "switch" is a device for making, breaking, or for changing the connections in an electric circuit.

(59) An "emergency stop switch" is a manually or automatically operated electric switch to cut off electric power independently of the regular operating controls.

(60) A "limit switch" is a switch which is operated by some part or motion of a power–driven machine or equipment to alter the electric circuit associated with the machine or equipment.

(61) A "main switch" is a switch controlling the entire power supply to the crane.

(62) A "master switch" is a switch which dominates the operation of contractors, relays, or other remotely operated devices.

(63) The "trolley" is the unit which travels on the bridge rails and carries the hoisting mechanism.

(64) "Trolley travel" means the trolley movement at right angles to the crane runway.

(65) "Truck" means the unit consisting of a frame, wheels, bearings, and axles which supports the bridge girders or trolleys.

[Order 73–5, § 296–24–23501, filed 5/9/73 and Order 73–4, § 296–24–23501, filed 5/7/73.]

WAC 296–24–23503 General requirements. (1) Application. This section applies to overhead and gantry cranes, including semigantry, cantilever gantry, wall cranes, storage bridge cranes, and others having the same fundamental characteristics. These cranes are grouped because they all have trolleys and similar travel characteristics.

(2) New and existing equipment. All new overhead and gantry cranes constructed and installed on or after the effective date of these standards, shall meet the design specifications of the American National Standard Safety Code for Overhead and Gantry Cranes, ANSI B30.2.0–1967. Overhead and gantry cranes constructed before the effective date of these standards, should be modified to conform to those design specifications, unless it can be shown that the crane cannot feasibly or economically be altered and that the crane substantially complies with the requirements of this section. (See WAC 296–24–010 variance and procedure.)

(3) Modifications. Cranes may be modified and rerated provided such modifications and the supporting structure are checked thoroughly for the new rated load by a qualified engineer or the equipment manufacturer. The crane shall be tested in accordance with WAC 296–24–23521(2). New rated load shall be displayed in accordance with (5) of this section.

(4) Wind indicators and rail clamps. Outdoor storage bridges shall be provided with automatic rail clamps. A wind–indicating device shall be provided which will give a visible or audible alarm to the bridge operator at a predetermined wind velocity. If the clamps act on the rail heads, any beads or weld flash on the rail heads shall be ground off.

(a) Calculations for wind pressure on outside overhead traveling cranes shall be based on not less than 30 pounds per square foot of exposed surface.

(5) Rated load marking. The rated load of the crane shall be plainly marked on each side of the crane, and if the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground or floor.

(6) Clearance from obstruction.

(a) Minimum clearance of 3 inches overhead and 2 inches laterally shall be provided and maintained between crane and obstructions in conformity with Specification No. 61 Crane Manufactures Association of America, Inc., Thomas Circle NW, Washington, D.C. 20005.

(b) Where passageways or walkways are provided obstructions shall not be placed so that safety of personnel will be jeopardized by movements of the crane.

(7) Clearance between parallel cranes. If the runways of two cranes are parallel, and there are no intervening

walls or structure, there shall be adequate clearance provided and maintained between the two bridges.

(8) Designated personnel. Only designated personnel shall be permitted to operate a crane covered by this section.

[Order 74-27, § 296-24-23503, filed 5/7/74; Order 73-5, § 296-24-23503, filed 5/9/73 and Order 73-4, § 296-24-23503, filed 5/7/73.]

WAC 296-24-23505 Cabs. (1) Cab location.

(a) The general arrangement of the cab and the location of control and protective equipment shall be such that all operating handles are within convenient reach of the operator when facing the area to be served by the load hook, or while facing the direction of travel of the cab. The arrangement shall allow the operator a full view of the load hook in all positions.

(b) The cab shall be located to afford a minimum of 3 inches clearance from all fixed structures within its area of possible movement.

(c) The clearance of the cab above the working floor or passageway should be not less than seven feet.

(2) Access to crane. Access to the cab and/or bridge walkway shall be by a conveniently placed fixed ladder, stairs, or platform, requiring no step over any gap exceeding 12 inches. Fixed ladders shall be in conformance with the American National Standard Safety Code for Fixed Ladders, ANSI A14.3-1956.

(3) Fire extinguisher. A carbon dioxide, dry-chemical, or equivalent hand fire extinguisher should be kept in the cab. Carbon tetrachloride extinguishers shall not be used.

(4) Lighting. Light in the cab shall be sufficient to enable the operator to see clearly enough to perform his work.

[Order 73-5, § 296-24-23505, filed 5/9/73 and Order 73-4, § 296-24-23505, filed 5/7/73.]

WAC 296-24-23507 Footwalks and ladders. (1) Location of footwalks.

(a) If sufficient headroom is available on cab-operated cranes, a footwalk shall be provided on the drive side along the entire length of the bridge of all cranes having the trolley running on the top of the girders. To give sufficient access to the opposite side of the trolley, there should be provided either a footwalk mounted on the trolley, a suitable footwalk or platform in the building, or a footwalk on the opposite side of the crane at least twice the length of the trolley.

(b) Footwalks should be located to give a headroom not less than 78 inches. In no case shall less than 48 inches be provided. If 48 inches of headroom cannot be provided, footwalks should be omitted from the crane and a stationary platform or landing stage built for workmen making repairs.

(2) Construction of footwalks.

(a) Footwalks shall be of rigid construction and designed to sustain a distributed load of at least 50 pounds per square foot.

(b) Footwalks shall have a walking surface of antislip type.

Note: Wood will meet this requirement.

(c) Footwalks should be continuous and permanently secured.

(d) Footwalks should have a clear passageway at least 18 inches wide except opposite the bridge motor, where they should be not less than 15 inches. The inner edge shall extend at least to the line of the outside edge of the lower cover plate or flange of the girder.

(3) Toeboards and handrails for footwalks. Toeboards and handrails shall be in compliance with WAC 296-24-750 through 296-24-75011.

(4) Ladders and stairways.

(a) Gantry cranes shall be provided with ladders or stairways extending from the ground to the footwalk or cab platform.

(b) Stairways shall be equipped with rigid and substantial metal handrails. Walking surfaces shall be of an antislip type.

(c) Ladders shall be permanently and securely fastened in place and shall be constructed in compliance with WAC 296-24-810 through 296-24-81011.

[Order 73-5, § 296-24-23507, filed 5/9/73 and Order 73-4, § 296-24-23507, filed 5/7/73.]

WAC 296-24-23509 Stops, bumpers, rail sweeps, and guards. (1) Trolley stops.

(a) Stops shall be provided at the limits of travel of the trolley.

(b) Stops shall be fastened to resist forces applied when contacted.

(c) A stop engaging the tread of the wheel shall be of a height at least equal to the radius of the wheel.

(2) Bridge bumpers.

(a) A crane shall be provided with bumpers or other automatic means providing equivalent effect, unless the crane travels at a slow rate of speed and has a faster deceleration rate due to the use of sleeve bearings, or is not operated near the ends of bridge and trolley travel, or is restricted to a limited distance by the nature of the crane operation and there is no hazard of striking any object in this limited distance or is used in similar operating conditions. The bumpers shall be capable of stopping the crane (not including the lifted load) at an average rate of deceleration not to exceed 3 ft/s/s when traveling in either direction at 20 percent of the rated load speed.

(i) The bumpers shall have sufficient energy absorbing capacity to stop the crane when traveling at a speed of at least 40 percent of rated load speed.

(ii) The bumpers shall be so mounted that there is no direct shear on bolts.

(iii) Bumpers shall be so designed and installed as to minimize parts falling from the crane in case of breakage.

(3) Trolley bumpers.

(a) A trolley shall be provided with bumpers or other automatic means of equivalent effect, unless the trolley travels at a slow rate of speed, or is not operated near the ends of bridge and trolley travel, or is restricted to a limited distance of the runway and there is no hazard of striking any object in this limited distance, or is used in

similar operating conditions. The bumpers shall be capable of stopping the trolley (not including the lifted load) at an average rate of deceleration not to exceed 4.7 ft./s/s when traveling in either direction at one–third of the rated load speed.

(i) When more than one trolley is operated on the same bridge, each shall be equipped with bumpers or equivalent on their adjacent ends.

(b) Bumpers or equivalent shall be designed and installed to minimize parts falling from the trolley in case of age.

(4) Rail sweeps. Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.

(5) Guards for hoisting ropes.

(a) If hoisting ropes run near enough to other parts to make fouling or chafing possible, guards shall be installed to prevent this condition.

(b) A guard shall be provided to prevent contact between bridge conductors and hoisting ropes if they could come into contact.

(6) Guards for moving parts.

(a) Exposed moving parts such as gears, set screws, projecting keys, chains, chain sprockets, and reciprocating components which might constitute a hazard under normal operating conditions shall be guarded.

(b) Guards shall be securely fastened.

(c) Each guard shall be capable of supporting without permanent distortion the weight of a 200–pound person unless the guard is located where it is impossible for a person to step on it.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–23509, filed 11/13/80; Order 74–27, § 296–24–23509, filed 5/7/74; Order 73–5, § 296–24–23509, filed 5/9/73 and Order 73–4, § 296–24–23509, filed 5/7/73.]

WAC 296-24-23511 Brakes. (1) Brakes for hoists.

(a) Each independent hoisting unit of a crane shall be equipped with at least one self–setting brake, hereafter referred to as a holding brake, applied directly to the motor shaft or some part of the gear train.

(b) Each independent hoisting unit of a crane, except worm–geared hoists, the angle of whose worm is such as to prevent the load from accelerating in the lowering direction shall, in addition to a holding brake, be equipped with control braking means to prevent overspeeding.

(2) Holding brakes.

(a) Holding brakes for hoist motors shall have not less than the following percentage of the full load hoisting torque at the point where the brake is applied.

(i) 125 percent when used with a control braking means other than mechanical.

(ii) 100 percent when used in conjunction with a mechanical control braking means.

(iii) 100 percent each if two holding brakes are provided.

(b) Holding brakes on hoists shall have ample thermal capacity for the frequency of operation required by the service.

(c) Holding brakes on hoists shall be applied automatically when power is removed.

(d) Where necessary holding brakes shall be provided with adjustment means to compensate for wear.

(e) The wearing surface of all holding–brake drums or discs shall be smooth.

(f) Each independent hoisting unit of a crane handling hot metal and having power control braking means shall be equipped with at least two holding brakes.

(3) Control braking means.

(a) A power control braking means such as regenerative, dynamic or countertorque braking, or a mechanically controlled braking means shall be capable of maintaining safe lowering speeds of rated loads.

(b) The control braking means shall have ample thermal capacity for the frequency of operation required by service.

(4) Brakes for trolleys and bridges.

(a) Foot operated brakes shall not require an applied force of more than 70 pounds to develop manufacturer's rated brake torque.

(b) Brakes may be applied by mechanical, electrical, pneumatic, hydraulic, or gravity means.

(c) Where necessary brakes shall be provided with adjustment means to compensate for wear.

(d) The wearing surface of all brake drums or discs shall be smooth.

(e) All foot–brake pedals shall be constructed so that the operator's foot will not easily slip off the pedal.

(f) Foot–operated brakes shall be equipped with automatic means for positive release when pressure is released from the pedal.

(g) Brakes for stopping the motion of the trolley or bridge shall be of sufficient size to stop the trolley or bridge within a distance in feet equal to 10 percent of full load speed in feet per minute when traveling at full speed with full load.

(h) If holding brakes are provided on the bridge or trolley(s), they shall not prohibit the use of a drift point in the control circuit.

(i) Brakes on trolleys and bridges shall have ample thermal capacity for the frequency of operation required by the service to prevent impairment of functions from overheating.

(5) Application of trolley brakes.

(a) On cab–operated cranes with cab on trolley, a trolley brake shall be required as specified under (4) of this section.

(b) A drag brake may be applied to hold the trolley in a desired position on the bridge and to eliminate creep with the power off.

(6) Application of bridge brakes.

(a) On cab–operated cranes with cab on bridge, a bridge brake is required as specified under (4) of this section.

(b) On cab–operated cranes with cab on trolley, a bridge brake of the holding type shall be required.

(c) On all floor, remote and pulpit–operated crane bridge drives, a brake or noncoasting mechanical drive shall be provided.

[Order 73–5, § 296–24–23511, filed 5/9/73 and Order 73–4, § 296–24–23511, filed 5/7/73.]

WAC 296-24-23513 Electric equipment. (1) General.

(a) Wiring and equipment shall comply with chapter 296-45 WAC and the state of Washington electrical construction code.

(b) The control circuit voltage shall not exceed 600 volts for a.c. or d.c. current.

(c) The voltage at pendant pushbuttons shall not exceed 150 volts for a.c. and 300 volts for d.c.

(d) Where multiple conductor cable is used with a suspended pushbutton station, the station shall be supported in a manner that will protect the electrical conductors against strain.

(e) Pendant control boxes shall be constructed to prevent electrical shock and shall be clearly marked for identification of functions.

(2) Equipment.

(a) Electrical equipment shall be so located or enclosed that live parts will not be exposed to accidental contact under normal operating conditions.

(b) Electric equipment shall be protected from dirt, grease, oil, and moisture.

(c) Guards for live parts shall be substantial and so located that they cannot be accidentally deformed so as to make contact with the live parts.

(3) Controllers.

(a) Cranes not equipped with spring-return controllers or momentary contact pushbuttons shall be provided with a device which will disconnect all motors from the line on failure of power and will not permit any motor to be restarted until the controller handle is brought to the "off" position, or a reset switch or button is operated.

(b) Lever operated controllers shall be provided with a notch or latch which in the "off" position prevents the handle from being inadvertently moved to the "on" position. An "off" detent or spring return arrangement is acceptable.

(c) The controller operating handle shall be located within convenient reach of the operator.

(d) As far as practicable, the movement of each controller handle shall be in the same general directions as the resultant movements of the load.

(e) The control for the bridge and trolley travel shall be so located that the operator can readily face the direction of travel.

(f) For floor-operated cranes, the controller or controllers if rope operated, shall automatically return to the "off" position when released by the operator.

(g) Pushbuttons in pendant stations shall return to the off position when pressure is released by the crane operator.

(h) Automatic cranes shall be so designed that all motions shall fail-safe if any malfunction of operation occurs.

(i) Remote-operated cranes shall function so that if the control signal for any crane motion becomes ineffective the crane motion shall stop.

(4) Resistors.

(a) Enclosures for resistors shall have openings to provide adequate ventilation, and shall be installed to prevent the accumulation of combustible matter near hot parts.

(b) Resistor units shall be supported so as to be free as possible from vibration.

(c) Provision shall be made to prevent broken parts or molten metal falling upon the operator or from the crane.

(5) Switches.

(a) The power supply to the runway conductors shall be controlled by a switch or circuit breaker located on a fixed structure, accessible from the floor, and arranged to be locked in the open position.

(b) On cab-operated cranes a switch or circuit breaker of the enclosed type, with provision for locking in the open position shall be provided in the leads from the runway conductors. A means of opening this switch or circuit breaker shall be located within easy reach of the operator.

(c) On floor-operated cranes, a switch or circuit breaker of the enclosed type, with provision for locking in the open position, shall be provided in the leads from the runway conductors. This disconnect shall be mounted on the bridge or footwalk near the runway collectors. One of the following types of floor operated disconnects shall be provided:

(i) Nonconductive rope attached to the main disconnect switch.

(ii) An undervoltage trip for the main circuit breaker operated by an emergency stop button in the pendant pushbutton station.

(iii) A main line contactor operated by a switch or pushbutton in the pendant pushbutton station.

(d) The hoisting motion of all electric traveling cranes shall be provided with an overtravel limit switch in the hoisting direction.

(e) All cranes using a lifting magnet shall have a magnet circuit switch of the enclosed type with provision for locking in the open position. Means for discharging the inductive load of the magnet shall be provided.

(6) Runway conductors. Conductors of the open type mounted on the crane runway beams or overhead shall be so located or so guarded that persons entering or leaving the cab or crane footwalk normally could not come into contact with them.

(7) Extension lamps. If a service receptacle is provided in the cab or on the bridge of cab-operated cranes, it shall be a grounded three-prong type permanent receptacle, not exceeding 300 volts.

(8) Floor operated cranes.

(a) An unobstructed aisle not less than three feet wide shall be maintained for travel of the operator except in such cases where the control handles are hung from the trolleys of traveling cranes.

(b) The handles of control ropes shall be distinctly different in contour so that, without looking, the operator will know which is the hoisting and which is the lowering handle. The direction of all movements of the crane shall be clearly indicated in some manner so that the operator can easily become familiar with them.

(c) When repairing runways, repairmen shall place rail stops and warning signs or signals so as to protect both ends of the section to be repaired.

(d) Repairmen shall take care to prevent loose parts from falling or being thrown upon the floor beneath.

[Order 73-5, § 296-24-23513, filed 5/9/73 and Order 73-4, § 296-24-23513, filed 5/7/73.]

WAC 296-24-23515 Hoisting equipment. (1) Sheaves.

(a) Sheave grooves shall be smooth and free from surface defects which could cause rope damage.

(b) Sheaves carrying ropes which can be momentarily unloaded shall be provided with close-fitting guards or other suitable devices to guide the rope back into the groove when the load is applied again.

(c) The sheaves in the bottom block shall be equipped with close-fitting guards that will prevent ropes from becoming fouled when the block is laying on the ground with ropes loose.

(d) Pockets and flanges of sheaves used with hoist chains shall be of such dimensions that the chain does not catch or bind during operation.

(e) All running sheaves shall be equipped with means for lubrication. Permanently lubricated, sealed and/or shielded bearings meet this requirement.

(2) Ropes.

(a) In using hoisting ropes, the crane manufacturer's recommendation shall be followed. The rated load divided by the number of parts of rope shall not exceed 20 percent of the nominal breaking strength of the rope.

(b) Socketing shall be done in the manner specified by the manufacturer of the assembly.

(c) Rope shall be secured to the drum as follows:

(i) No less than two wraps of rope shall remain on the drum when the hook is in its extreme low position.

(ii) Rope end shall be anchored by a clamp securely attached to the drum, or by a socket arrangement approved by the crane or rope manufacturer.

(d) Rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope. Spacing and number of all types of clips shall be in accordance with (2)(e) of this section. Clips shall be drop-forged steel in all sizes manufactured commercially. When a newly installed rope has been in operation for an hour, all nuts on the clip bolts shall be retightened.

(e)

Diameter of Rope	Number of Clips Required	Space Between Clips
1 1/2 inch	8	10 inches
1 3/8 inch	7	9 inches
1 1/4 inch	6	8 inches
1 1/8 inch	5	7 inches
1 inch	5	6 inches
7/8 inch	5	5 1/4 inches
3/4 inch	5	4 1/2 inches
3/8 to 5/8 inch	4	3 inches

(f) Swaged or compressed fittings shall be applied as recommended by the rope or crane manufacturer.

(g) Wherever exposed to temperatures, at which fiber cores would be damaged, rope having an independent wire-rope or wire-strand core, or other temperature-damage resistant core shall be used.

(h) Replacement rope shall be the same size, grade, and construction as the original rope furnished by the crane manufacturer, unless otherwise recommended by a wire rope manufacturer due to actual working condition requirements.

(3) Equalizers. If a load is supported by more than one part of rope, the tension in the parts shall be equalized.

(4) Hooks. Hooks shall meet the manufacturer's recommendations and shall not be overloaded. Safety latch-type hooks shall be used or the hook shall be moused.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-23515, filed 11/13/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-23515, filed 7/31/79; Order 73-5, § 296-24-23515, filed 5/9/73 and Order 73-4, § 296-24-23515, filed 5/7/73.]

WAC 296-24-23517 Warning device. Except for floor operated cranes a gong or other effective warning signal shall be provided for each crane equipped with a powered traveling mechanism.

[Order 73-5, § 296-24-23517, filed 5/9/73 and Order 73-4, § 296-24-23517, filed 5/7/73.]

WAC 296-24-23519 Inspection. (1) Inspection classification.

(a) Initial inspection. Prior to initial use all new and altered cranes shall be inspected to insure compliance with the provisions of these standards.

(b) Inspection procedure for cranes in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below:

(i) Frequent inspection - daily to monthly intervals.

(ii) Periodic inspection - 1 to 12 month intervals.

(2) Frequent inspection. The following items shall be inspected for defects at intervals as defined in (1)(b) of this section or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. All deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) All functional operating mechanisms for maladjustment interfering with proper operation. Daily.

(b) Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems. Daily.

(c) Hooks with deformation or cracks. Visual inspection daily; monthly inspection with signed reports. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook refer to WAC 296-24-23523 (3)(c)(i).

(d) Hoist or load attachment chains, including end connections, for excessive wear, twist, distorted links interfering with proper function, or stretch beyond manufacturer's recommendations. Visual inspection daily; monthly inspection with signed report.

(e) Rope slings, including end connections, for excessive wear, broken wires, stretch, kinking, or twisting. Visual inspection daily; monthly inspection with signed report.

(f) All functional operating mechanisms for excessive wear of components.

(g) Rope reeving for noncompliance with manufacturer's recommendations.

(3) Periodic inspection. Complete inspections of the crane shall be performed at intervals as generally defined in (1)(b)(ii) of this section, depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (2) of this section and in addition, the following items. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) Deformed, cracked, or corroded members.

(b) Loose bolts or rivets.

(c) Cracked or worn sheaves and drums.

(d) Worn, cracked or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices.

(e) Excessive wear on brake system parts, linings, pawls, and ratchets.

(f) Load, wind, and other indicators over their full range, for any significant inaccuracies.

(g) Gasoline, diesel, electric, or other powerplants for improper performance or noncompliance with applicable safety requirements.

(h) Excessive wear of chain drive sprockets and excessive chain stretch.

(i) Crane hooks. Magnetic particle or other suitable crack detecting inspection should be performed at least once each year.

(j) Electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches and pushbutton stations.

(4) Cranes not in regular use.

(a) A crane which has been idle for a period of 1 month or more, but less than 6 months, shall be given an inspection conforming with requirements of (2) of this section and WAC 296-24-23525(2), before placing in service.

(b) A crane which has been idle for a period of over 6 months shall be given a complete inspection conforming with requirements of (2) and (3) of this section and WAC 296-24-23525(2) before placing in service.

(c) Standby cranes shall be inspected at least semi-annually in accordance with requirements of (2) of this section and WAC 296-24-23525(2). Standby cranes exposed to adverse environment should be inspected more frequently.

[Order 73-5, § 296-24-23519, filed 5/9/73 and Order 73-4, § 296-24-23519, filed 5/7/73.]

WAC 296-24-23521 Testing. (1) Operational tests.

(a) Prior to initial use all new and altered cranes shall be tested to insure compliance with this section including the following functions:

(i) Hoisting and lowering.

(ii) Trolley travel.

(iii) Bridge travel.

(iv) Limit switches, locking and safety devices.

(b) The trip setting of hoist limit switches shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the limit switch shall be located so that it will trip the switch, under all conditions, in sufficient time to prevent contact of the hook or hook block with any part of the trolley.

(2) Rated load test. Prior to initial use all new, extensively repaired, and altered cranes should be tested by or under the direction of an appointed or authorized person, confirming the load rating of the crane. The load rating should not be more than 80 percent of the maximum load sustained during the test. Test loads shall not be more than 125 percent of the rated load unless otherwise recommended by the manufacturer. The tests reports shall be placed on file where readily available to appointed personnel.

[Order 73-5, § 296-24-23521, filed 5/9/73 and Order 73-4, § 296-24-23521, filed 5/7/73.]

WAC 296-24-23523 Maintenance. (1) Preventive maintenance. A preventive maintenance program based on the crane manufacturer's recommendations shall be established.

(2) Maintenance procedure.

(a) Before adjustments and repairs are started on a crane the following precautions shall be taken:

(i) The crane to be repaired shall be run to a location where it will cause the least interference with other cranes and operations in the area.

(ii) All controllers shall be at the off position.

(iii) The main or emergency switch shall be open and locked in the open position.

(iv) Warning or "out of order" signs shall be placed on the crane, also on the floor beneath or on the hook where visible from the floor.

(v) Where other cranes are in operation on the same runway, rail stops or other suitable means shall be provided to prevent interference with the idle crane.

(vi) Where temporary protective rail stops are not available, or practical, a signalman should be placed at a visual vantage point for observing the approach of an active crane and warning its operator when reaching the limit of safe distance from the idle crane.

(b) After adjustments and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated and maintenance equipment removed.

(3) Adjustments and repairs.

(a) Any unsafe conditions disclosed by the inspection requirements of WAC 296-24-23519 shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated personnel.

(b) Adjustments shall be maintained to assure correct functioning of components. The following are examples:

(i) All functional operating mechanisms.

(ii) Limit switches.

(iii) Control systems.

(iv) Brakes.

(v) Power plants.

(c) Repairs or replacements shall be provided promptly as needed for safe operation. The following are examples:

(i) Accessory components, such as hooks, shall be carefully examined periodically and at the time of annual examination and inspection. Cracked or deformed hooks shall be discarded immediately and not reused on any equipment subject to the provisions of this code.

(ii) Load attachment chains and rope slings showing defects described in WAC 296-24-23519 (2)(d) and (e) respectively.

(iii) All critical parts which are cracked, broken, bent, or excessively worn.

(iv) Pendant control stations shall be kept clean and function labels kept legible.

[Order 73-5, § 296-24-23523, filed 5/9/73 and Order 73-4, § 296-24-23523, filed 5/7/73.]

WAC 296-24-23525 Rope inspection. (1) Running ropes. A thorough inspection of all ropes shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available to appointed personnel. Any deterioration, resulting in appreciable loss of original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution or concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Other ropes. All rope which has been idle for a period of a month or more due to shutdown or storage of a crane on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by an appointed person whose approval shall be required for further use of the rope. A written and dated report of the rope condition shall be available for inspection.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-23525, filed 11/13/80; Order 73-5, § 296-24-23525, filed 5/9/73 and Order 73-4, § 296-24-23525, filed 5/7/73.]

WAC 296-24-23527 Handling the load. (1) Size of load. The crane shall not be loaded beyond its rated load except for test purposes as provided in WAC 296-24-23521.

(2) Attaching the load.

(a) The hoist chain or hoist rope shall be free from kinks or twists and shall not be wrapped around the load.

(b) The load shall be attached to the load block hook by means of slings or other approved devices.

(c) Care shall be taken to make certain that the sling clears all obstacles.

(3) Moving the load.

(a) The load shall be well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(c) During hoisting care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) The load does not contact any obstructions.

(d) Cranes shall not be used for side pulls except when specifically authorized by a responsible person who has determined that the stability of the crane is not thereby endangered and that various parts of the crane will not be overstressed.

(e) While any employee is on the load or hook, there shall be no hoisting, lowering, or traveling.

(f) The employer shall require that the operator avoid carrying loads over people.

(g) The operator shall test the brakes each time a load approaching the rated load is handled. The brakes shall be tested by raising the load a few inches and applying the brakes.

(h) The load shall not be lowered below the point where less than two full wraps of rope remain on the hoisting drum.

(i) When two or more cranes are used to lift a load one qualified responsible person shall be in charge of the operation. He shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

(j) The employer shall assure that the operator does not leave his position at the controls while the load is suspended.

(k) When starting the bridge and when the load or hook approaches near or over personnel, the warning signal shall be sounded.

(4) Hoist limit switch.

(a) At the beginning of each operator's shift, the upper limit switch of each hoist shall be tried out under no load. Extreme care shall be exercised; the block shall be "inched" into the limit or run in at slow speed. If the switch does not operate properly, the appointed person shall be immediately notified.

(b) The hoist limit switch which controls the upper limit of travel of the load block shall never be used as an operating control.

[Order 73-5, § 296-24-23527, filed 5/9/73 and Order 73-4, § 296-24-23527, filed 5/7/73.]

WAC 296-24-23529 Operators. (1) Cranes shall be operated only be regular crane operators, authorized substitutes who have had adequate experience and training under the supervision of a competent operator, or by crane repairmen or inspectors.

(2) No person should be permitted to operate a crane who cannot speak and read the English language, or who is under eighteen years of age.

(3) No person shall be permitted to operate a crane whose hearing or eye-sight is impaired, or who may be suffering from heart disease or similar ailments.

(4) The operator shall familiarize himself fully with all crane rules and with the crane mechanism and its proper care. If adjustments or repairs are necessary, he shall report the same at once to the proper authority.

(5) The operator shall not eat, smoke or read while actually engaged in the operation of the crane, or operate the crane when he is physically unfit.

(6) The operator or someone especially designated shall properly lubricate all working parts of the crane.

(7) Cranes shall be kept clean.

(8) Whenever the operator finds the main or emergency switch open, he shall not close it, even when starting on regular duty, until he has made sure that no one is on or about the crane. He shall not oil or repair the crane unless the main switch is open.

(9) If the power goes off, the operator shall immediately throw all controllers to "off" position until the power is again available.

(10) Before closing the main switch the operator shall make sure that all controllers are in "off" position until the power is again available.

(11) The operator shall recognize signals only from the man who is supervising the lift. Operating signals shall follow an established standard. Whistle signals may be used where one crane only is in operation.

(12) Bumping into runway stops or other cranes shall be avoided. When the operator is ordered to engage with or push other cranes, he shall do so with special care for the safety of persons on or below cranes.

(13) When lowering a load, the operator shall proceed carefully and make sure that he has the load under safe control.

(14) When leaving the cage the operator shall throw all controllers to "off" position and open the main switch.

(15) If the crane is located out-of-doors the operator shall lock the crane in a secure position to prevent it from being blown along or off the track by a severe wind.

(16) Operators shall not permit anyone to ride on the load or hooks, unless using a lifeline or safety device approved by the Department.

[Order 73-5, § 296-24-23529, filed 5/9/73 and Order 73-4, § 296-24-23529, filed 5/7/73.]

WAC 296-24-23531 Other requirements--General. (1) Ladders.

(a) The employer shall insure that hands are free from encumbrances while personnel are using ladders.

(b) Articles which are too large to be carried in pockets or belts shall be lifted and lowered by hand line.

(2) Cabs.

(a) Necessary clothing and personal belongings shall be stored in such a manner as not to interfere with access or operation.

(b) Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.

(3) Fire extinguishers. The employer shall insure that operators are familiar with the operation and care of fire extinguishers provided.

[Order 73-5, § 296-24-23531, filed 5/9/73 and Order 73-4, § 296-24-23531, filed 5/7/73.]

WAC 296-24-237 Construction, operation and maintenance--Chain and electric hoists. (1) Chain and electric hoists shall be of what is known as "all steel construction." No cast iron shall be used in parts subject to tension except drums, bearings or brake shoes.

(2) The chains shall be made of the best quality steel or iron with welded links.

(3) Chain and electric hoists shall have a factor of safety of at least five.

(4) Chain and electric hoists shall be equipped with an approved device which will automatically lock the load when hoisting is stopped.

(5) Electric hoists shall be provided with an approved limit stop to prevent the hoist block from traveling too far in case the operating handle is not released in time.

[Order 73-5, § 296-24-237, filed 5/9/73 and Order 73-4, § 296-24-237, filed 5/7/73.]

WAC 296-24-238 Air hoists. (1) To prevent piston rod lock nuts from becoming loose and allowing rod to drop when supporting a load, lock nut shall be secured to piston rod by a castellated nut and cotter-pin.

(2) A clevis or other means shall be used to prevent hoists cylinder becoming detached from hanger.

[Order 73-5, § 296-24-238, filed 5/9/73 and Order 73-4, § 296-24-238, filed 5/7/73.]

WAC 296-24-240 Crawler locomotive and truck cranes.

[Order 73-5, § 296-24-240, filed 5/9/73 and Order 73-4, § 296-24-240, filed 5/7/73.]

WAC 296-24-24001 Definitions. (1) A "crawler crane" consists of a rotating superstructure with power plant, operating machinery, and boom, mounted on a base, equipped with crawler treads for travel. Its function is to hoist and swing loads at various radii.

(2) A "locomotive crane" consists of a rotating superstructure with power plant, operating machinery and boom, mounted on a base or car equipped for travel on railroad track. It may be self-propelled or propelled by

an outside source. Its function is to hoist and swing loads at various radii.

(3) A "truck crane" consists of a rotating superstructure with power plant, operating machinery and boom, mounted on an automotive truck equipped with a power plant for travel. Its function is to hoist and swing loads at various radii.

(4) A "wheel mounted crane" (wagon crane) consists of a rotating superstructure with power plant, operating machinery and boom, mounted on a base or platform equipped with axles and rubber-tired wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure. Its function is to hoist and swing loads at various radii.

(5) An "accessory" is a secondary part or assembly of parts which contributes to the overall function and usefulness of a machine.

(6) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(7) "ANSI" means the American National Standards Institute.

(8) An "angle indicator" (boom) is an accessory which measures the angle of the boom to the horizontal.

(9) The "axis of rotation" is the vertical axis around which the crane superstructure rotates.

(10) "Axle" means the shaft or spindle with which or about which a wheel rotates. On truck- and wheel-mounted cranes it refers to an automotive type of axle assembly including housings, gearing, differential, bearings, and mounting appurtenances.

(11) "Axle" (bogie) means two or more automotive-type axles mounted in tandem in a frame so as to divide the load between the axles and permit vertical oscillation of the wheels.

(12) The "base" (mounting) is the traveling base or carrier on which the rotating superstructure is mounted such as a car, truck, crawlers, or wheel platform.

(13) The "boom" (crane) is a member hinged to the front of the rotating superstructure with the outer end supported by ropes leading to a gantry or "A" frame and used for supporting the hoisting tackle.

(14) The "boom angle" is the angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel pin) centerline and boom point sheave pin centerline.

(15) The "boom hoist" is a hoist drum and rope reeving system used to raise and lower the boom. The rope system may be all live reeving or a combination of live reeving and pendants.

(16) The "boom stop" is a device used to limit the angle of the boom at the highest position.

(17) A "brake" is a device used for retarding or stopping motion by friction or power means.

(18) A "cab" is housing which covers the rotating superstructure machinery and/or operator's station. On truck crane trucks a separate cab covers the driver's station.

(19) The "clutch" is a friction, electromagnetic, hydraulic, pneumatic, or positive mechanical device for engagement or disengagement of power.

(20) The "counterweight" is a weight used to supplement the weight of the machine in providing stability for lifting working loads.

(21) "Designated" means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(22) The "drum" is the cylindrical members around which ropes are wound for raising and lowering the load or boom.

(23) "Dynamic" (loading) means loads introduced into the machine or its components by forces in motion.

(24) The "gantry" (A-frame) is a structural frame, extending above the superstructure, to which the boom supports ropes are reeved.

(25) A "jib" is an extension attached to the boom point to provide added boom length for lifting specified loads. The jib may be in line with the boom or offset to various angles.

(26) "Load" (working) means the external load, in pounds, applied to the crane, including the weight of load-attaching equipment such as load blocks, shackles, and slings.

(27) "Load block" (upper) means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended from the boom point.

(28) "Load block" (lower) means the assembly of hook or shackle, swivel, sheaves, pins, and frame suspended by the hoisting ropes.

(29) A "load hoist" is a hoist drum and rope reeving system used for hoisting and lowering loads.

(30) "Load ratings" are crane ratings in pounds established by the manufacturer in accordance with WAC 296-24-24005.

(31) "Outriggers" are extendable or fixed metal arms, attached to the mounting base, which rest on supports at the outer ends.

(32) "Rail clamp" means a tong-like metal device, mounted on a locomotive crane car, which can be connected to the track.

(33) "Reeving" means a rope system in which the rope travels around drums and sheaves.

(34) "Rope" refers to a wire rope unless otherwise specified.

(35) "Side loading" means a load applied at an angle to the vertical plane of the boom.

(36) A "standby crane" is a crane which is not in regular service but which is used occasionally or intermittently as required.

(37) A "standing (guy) rope" is a supporting rope which maintains a constant distance between the points of attachment to the two components connected by the rope.

(38) "Structural competence" means the ability of the machine and its components to withstand the stresses imposed by applied loads.

(39) "Superstructure" means the rotating upper frame structure of the machine and the operating machinery mounted thereon.

(40) "Swing" means the rotation of the superstructure for movement of loads in a horizontal direction about the axis of rotation.

(41) "Swing mechanism" means the machinery involved in providing rotation of the superstructure.

(42) "Tackle" is an assembly of ropes and sheaves arranged for hoisting and pulling.

(43) "Transit" means the moving or transporting of a crane from one jobsite to another.

(44) "Travel" means the functions of the machine moving from one location to another, on a jobsite.

(45) The "travel mechanism" is the machinery involved in providing travel.

(46) "Wheelbase" means the distance between centers of front and rear axles. For a multiple axle assembly the axle center for wheelbase measurement is taken as the midpoint of the assembly.

(47) The "whipline" (auxiliary hoist) is a separate hoist rope system of lighter load capacity and higher speed than provided by the main hoist.

(48) A "winch head" is a power driven spool for handling of loads by means of friction between fiber or wire rope and spool.

[Order 73-5, § 296-24-24001, filed 5/9/73 and Order 73-4, § 296-24-24001, filed 5/7/73.]

WAC 296-24-24003 General requirements. (1) Application. This section applies to crawler cranes, locomotive cranes, wheel mounted cranes of both truck and self-propelled wheel type, and any variations thereof which retain the same fundamental characteristics. This section includes only cranes of the above types, which are basically powered by internal combustion engines or electric motors and which utilize drums and ropes. Cranes designed for railway and automobile wreck clearances are excepted. The requirements of these standards are applicable only to machines when used as lifting cranes.

(2) New and existing equipment. All new crawler, locomotive, and truck cranes constructed and utilized on or after the effective date of these standards, shall meet the design specifications of the American National Standard Safety Code for Crawler, Locomotive, and Truck Cranes, ANSI B 30.5-1968. Crawler, locomotive, and truck cranes constructed prior to the effective date of these standards should be modified to conform to those design specifications by December 31, 1973, unless it can be shown that the crane cannot feasibly or economically be altered and that the crane substantially complies with the requirements of this section. Replacement parts shall be of equal or better quality than the original equipment and suitable for the purpose. Repairs or modifications shall be such as to render the equipment equal to or better than the original construction or design.

(3) Designated personnel. Only designated personnel shall be permitted to operate a crane covered by this section.

[Order 74-27, § 296-24-24003, filed 5/7/74; Order 73-5, § 296-24-24003, filed 5/9/73 and Order 73-4, § 296-24-24003, filed 5/7/73.]

WAC 296-24-24005 Load ratings. (1) Load ratings—Where stability governs lifting performance.

(a) The margin of stability for determination of load ratings, with booms of stipulated lengths at stipulated working radii for the various types of crane mountings is established by taking a percentage of the loads which will produce a condition of tipping or balance with the boom in the least stable direction, relative to the mounting. The load ratings shall not exceed the following percentages for cranes, with the indicated types of mounting under conditions stipulated in (1)(b) and (c) of this section.

Type of crane mounting:	Maximum load ratings (percent of tipping loads)
Locomotive, without outriggers;	
Booms 60 feet or less	85
Booms over 60 feet	85 [1]
Locomotive, using outriggers fully extended	80
Crawler, without outriggers	75
Crawler, using outriggers fully extended	85
Truck and wheel mounted without outriggers or using outriggers fully extended	85

[1]Unless this results in less than 30,000 pound-feet net stabilizing moment about the rail, which shall be minimum with such booms.

(b) The following stipulation shall govern the application of the values in (1)(a) of this section for locomotive cranes:

(i) Tipping with or without the use of outriggers occurs when half of the wheels farthest from the load leave the rail.

(ii) The crane shall be standing on track which is level within 1 percent grade.

(iii) Radius of the load is the horizontal distance from a projection of the axis of rotation to the rail support surface, before loading, to the center of vertical hoist line or tackle with load applied.

(iv) Tipping loads from which ratings are determined shall be applied under static conditions only, i.e., without dynamic effect of hoisting, lowering, or swinging.

(v) The weight of all auxiliary handling devices such as hoist blocks, hooks, and slings shall be considered a part of the load rating.

(c) Stipulations governing the application of the values in (i)(a) of this section for crawler, truck, and wheel-mounted cranes shall be in accordance with Crane Load-Stability Test Code. Society of Automotive Engineers (SAE) J765.

Note: The effectiveness of these preceding stability factors will be influenced by such additional factors as freely suspended loads, track, wind, or ground conditions, condition and inflation of rubber tires, boom lengths, proper operating speeds for existing conditions, and, in general, careful and competent operation. All of these shall be taken into account by the user.

(2) Rated capacity chart. A chart indicating the manufacturer's rated capacity at all operating radii for all

permissible boom lengths and jib lengths with alternate ratings for optional equipment affecting such ratings shall be posted in all mobile type cranes and shall be readily visible to the operator in his normal operating position.

(3) Inspection classification.

(a) Initial inspection. Prior to initial use all new and altered cranes shall be inspected to insure compliance with provisions of these standards.

(4) All hooks shall be of the safety latch–type or the hook shall be moused.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–24005, filed 7/31/79; Order 73–5, § 296–24–24005, filed 5/9/73 and Order 73–4, § 296–24–24005, filed 5/7/73.]

WAC 296-24-24007 Inspection classification. (1) Regular inspection. Inspection procedure for cranes in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the crane and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as "frequent" and "periodic" with respective intervals between inspections as defined below:

(a) Frequent inspection: Daily to monthly intervals.

(b) Periodic inspection: One– to 12–month intervals, or as specifically recommended by the manufacturer.

(2) Frequent inspection. Items such as the following shall be inspected for defects at intervals as defined in (2)(a) of this section or as specifically indicated including observation during operation for any defects which might appear between regular inspection. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) All control mechanisms for maladjustment interfering with proper operation: Daily.

(b) All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.

(c) All safety devices for malfunction.

(d) Deterioration or leakage in air or hydraulic systems: Daily.

(e) Crane hooks with deformations or cracks. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook.

(f) Rope reeving for noncompliance with manufacturer's recommendations.

(g) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.

(3) Periodic inspection. Complete inspections of the crane shall be performed at intervals as generally defined in (2)(b) of this section depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (3) of this section and in addition, items such as the following. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:

(a) Deformed, cracked, or corroded members, in the crane structure and boom.

(b) Loose bolts or rivets.

(c) Cracked or worn sheaves and drums.

(d) Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers and locking devices.

(e) Excessive wear on brake and clutch system parts, linings, pawls, and ratchets.

(f) Load, boom angle, and other indicators over their full range, for any significant inaccuracies.

(g) Gasoline, diesel, electric, or other power plants for improper performance or noncompliance with safety requirements.

(h) Excessive wear of chain–drive sprockets and excessive chain stretch.

(i) Travel steering, braking, and locking devices, for malfunction.

(j) Excessively worn or damaged tires.

(4) Cranes not in regular use.

(a) A crane which has been idle for a period of one month or more, but less than 6 months, shall be given an inspection conforming with requirements of (3) of this section and WAC 296–24–24013 (2)(b) before placing in service.

(b) A crane which has been idle for a period of six months shall be given a complete inspection conforming with requirements of (3) and (4) of this section and WAC 296–24–24013 (2)(b) before placing in service.

(c) Standby cranes shall be inspected at least semi–annually in accordance with requirements of (3) of this section and WAC 296–24–24013 (2)(b). Such cranes which are exposed to adverse environment should be inspected more frequently.

(5) Inspection records. Written, dated, and signed inspection reports and records shall be made monthly on critical items in use such as brakes, crane hooks, and ropes. Records shall be kept readily available.

[Order 73–5, § 296–24–24007, filed 5/9/73 and Order 73–4, § 296–24–24007, filed 5/7/73.]

WAC 296-24-24009 Testing. (1) Operational tests.

(a) In addition to prototype tests and quality–control measures, the user of each new production crane shall require that it be tested and related data supplied by the manufacturer to the extent necessary to assure compliance with the operational requirements of this paragraph including functions such as the following:

(i) Load hoisting and lowering mechanisms

(ii) Boom hoisting and lower mechanisms

(iii) Swinging mechanism

(iv) Travel mechanism

(v) Safety devices

(b) Where the complete production crane is not supplied by one manufacturer such tests shall be conducted at final assembly.

(c) Certified production–crane test results shall be made available.

(2) Rated load test.

(a) Written reports shall be available showing test procedures and confirming the adequacy of repairs or alterations.

(b) Test loads shall not exceed 110 percent of the rated load at any selected working radius.

(c) Where rerating is necessary:

(i) Crawler, truck, and wheel–mounted cranes shall be tested in accordance with SAE Recommended Practice, Crane Load Stability Test Code J765 (April 1961).

(ii) Locomotive cranes shall be tested in accordance with WAC 296–24–24005 (1)(a) and (b).

(iii) Rerating test report shall be readily available.

(d) No cranes shall be rerated in excess of the original load ratings unless such rating changes are approved by the crane manufacturer or final assembler.

[Order 73–5, § 296–24–24009, filed 5/9/73 and Order 73–4, § 296–24–24009, filed 5/7/73.]

WAC 296–24–24011 Maintenance procedure. (1) Any unsafe conditions disclosed by the inspection requirements of this section shall be corrected before operation of the crane is resumed. Adjustments and repairs shall be done only by designated personnel.

(2) After adjustments and repairs have been made the crane shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

[Order 73–5, § 296–24–24011, filed 5/9/73 and Order 73–4, § 296–24–24011, filed 5/7/73.]

WAC 296–24–24013 Rope inspection. (1) Running ropes. A thorough inspection of all ropes in use shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available. All inspections shall be performed by an appointed or authorized person. Any deterioration, resulting in appreciable loss of original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal, or external corrosion or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution of concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Other ropes.

(a) Heavy wear and/or broken wires may occur in sections in contact with equalizer sheaves or other sheaves where rope travel is limited, or with saddles. Particular care shall be taken to inspect ropes at these locations.

(b) All rope which has been idle for a period of a month or more due to shut down or storage of a crane on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration and shall be performed by an appointed or authorized person whose approval shall be required for further use of the rope. A written and dated report of the rope condition shall be available.

(c) Particular care shall be taken in the inspection of nonrotating rope.

[Order 73–5, § 296–24–24013, filed 5/9/73 and Order 73–4, § 296–24–24013, filed 5/7/73.]

WAC 296–24–24015 Handling the load. (1) Size of load.

(a) No crane shall be loaded beyond the rated load, except for test purposes as provided in WAC 296–24–24009.

(b) When loads which are limited by structural competence rather than by stability are to be handled, it shall be ascertained that the weight of the load has been determined within plus or minus 10 percent before it is lifted.

(2) Attaching the load.

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other approved devices.

(3) Moving the load.

(a) The employer shall assure that:

(i) The crane is level and where necessary blocked properly.

(ii) The load is well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist, the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(iv) If there is a slack rope condition, it should be determined that the rope is properly seated on the drum and in the sheaves.

(c) During hoisting care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) The load does not contact any obstructions.

(d) Side loading of booms shall be limited to freely suspended loads. Cranes shall not be used for dragging loads sideways.

(e) No hoisting, lowering, swinging, or traveling shall be done while anyone is on the load or hook.

(f) The operator should avoid carrying loads over people.

(g) On truck mounted cranes, no loads shall be lifted over the front area except as approved by the crane manufacturer.

(h) The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

(i) Outriggers shall be used when the load to be handled at that particular radius exceeds the rated load without outriggers as given by the manufacturer for that

crane. Where floats are used they shall be securely attached to the outriggers. Wood blocks used to support outriggers shall:

(i) Be strong enough to prevent crushing.

(ii) Be free from defects.

(iii) Be of sufficient width and length to prevent shifting or toppling under load.

(j) Neither the load nor the boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(k) Before lifting loads with locomotive cranes without using outriggers, means shall be applied to prevent the load from being carried by the truck springs.

(l) When two or more cranes are used to lift one load, one designated person shall be responsible for the operation. He shall be required to analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made.

(m) In transit the following additional precautions shall be exercised.

(i) The boom shall be carried in line with the direction of motion.

(ii) The superstructure shall be secured against rotation, except when negotiating turns when there is an operator in the cab or the boom is supported on a dolly.

(iii) The empty hook shall be lashed or otherwise restrained so that it cannot swing freely.

(n) Before traveling a crane with load, a designated person shall be responsible for determining and controlling safety. Decisions such as position of load, boom location, ground support, travel route, and speed of movement shall be in accord with his determinations.

(o) A crane with or without load shall not be traveled with the boom so high that it may bounce back over the cab.

(p) When rotating the crane, sudden starts and stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radii at which it can be controlled. A tag or restraint line shall be used when rotation of the load is hazardous.

(q) When a crane is to be operated at a fixed radius, the boom-hoist pawl or other positive locking device shall be engaged.

(r) Ropes shall not be handled on a winch head without the knowledge of the operator.

(s) While a winch head is being used, the operator shall be within convenient reach of the power unit control lever.

(4) Holding the load.

(a) The operator shall not be permitted to leave his position at the controls while the load is suspended.

(b) No person should be permitted to stand or pass under a load on the hook.

(c) If the load must remain suspended for any considerable length of time, the operator shall hold the drum from rotating in the lowering direction by activating the positive controllable means of the operator's station.

[Order 73-5, § 296-24-24015, filed 5/9/73 and Order 73-4, § 296-24-24015, filed 5/7/73.]

WAC 296-24-24017 Other requirements. (1) Rail clamps. Rail clamps shall not be used as a means of restraining tipping of a locomotive crane.

(2) Ballast or counterweight. Cranes shall not be operated without the full amount of any ballast or counterweight in place as specified by the maker, but truck cranes that have dropped the ballast or counterweight may be operated temporarily with special care and only for light loads without full ballast or counterweight in place. The ballast or counterweight in place specified by the manufacturer shall not be exceeded.

(3) Cabs.

(a) Necessary clothing and personal belongings shall be stored in such a manner as to not interfere with access or operation.

(b) Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.

(4) Refueling.

(a) Refueling with small portable containers shall be done with Underwriter's Laboratories or Factory Mutual Laboratories approved, or equivalent, safety type can equipped with an automatic closing cap and flame arrester.

(b) Machines shall not be refueled with the engine running.

(5) Fire extinguishers.

(a) A carbon dioxide, dry chemical, or equivalent fire extinguisher shall be kept in the cab or vicinity of the crane.

(b) Operating and maintenance personnel shall be made familiar with the use and care of the fire extinguishers provided.

(6) Swinging locomotive cranes. A locomotive crane shall not be swung into a position where railway cars on an adjacent track might strike it, until it has been ascertained that cars are not being moved on the adjacent track and proper flag protection has been established.

[Order 73-5, § 296-24-24017, filed 5/9/73 and Order 73-4, § 296-24-24017, filed 5/7/73.]

WAC 296-24-24019 Operating near electric power lines. (1) Clearances. Except where the electrical distribution and transmission lines have been deenergized and visibly grounded at point of work or where insulating barriers not a part of or an attachment to the crane have been erected to prevent physical contact with the lines, cranes shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(a) For lines rated 50 kv. or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet.

(b) For lines rated over 50 kv. minimum, clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or twice the length of the line insulator but never less than 10 feet.

(c) In transit with no load and boom lowered the clearance shall be a minimum of 4 feet.

(2) Boom guards. Cage-type boom guards, insulating links, or proximity warning devices may be used on

cranes, but the use of such devices shall not operate to alter the requirements of (1) of this section.

(3) Notification. Before the commencement of operations near electrical lines, the owners of the lines or their authorized representative shall be notified and provided with all pertinent information. The cooperation of the owner shall be requested.

(4) Overhead wires. Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line.

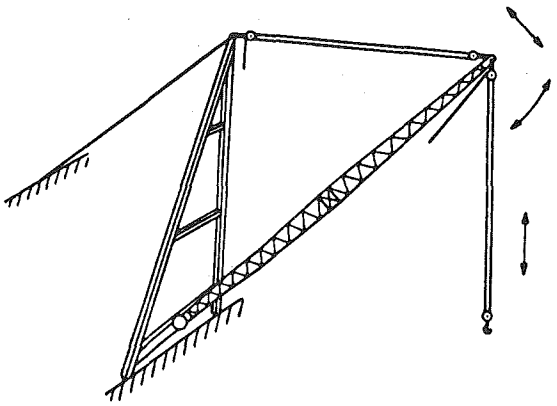
[Order 73-5, § 296-24-24019, filed 5/9/73 and Order 73-4, § 296-24-24019, filed 5/7/73.]

WAC 296-24-245 Derricks.

[Order 73-5, § 296-24-245, filed 5/9/73 and Order 73-4, § 296-24-245, filed 5/7/73.]

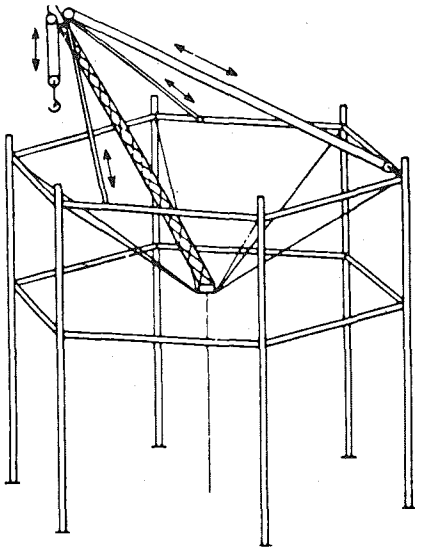
WAC 296-24-24501 Definitions. (1) A "derrick" is an apparatus consisting of a mast or equivalent member held at the head by guys or braces, with or without a boom, for use with a hoisting mechanism and operating ropes.

(2) "A-frame derrick" means a derrick in which the boom is hinged from a cross member between the bottom ends of two upright members spread apart at the lower ends and joined at the top; the boom point secured to the junction of the side members, and the side members are braced or guyed from this junction point.



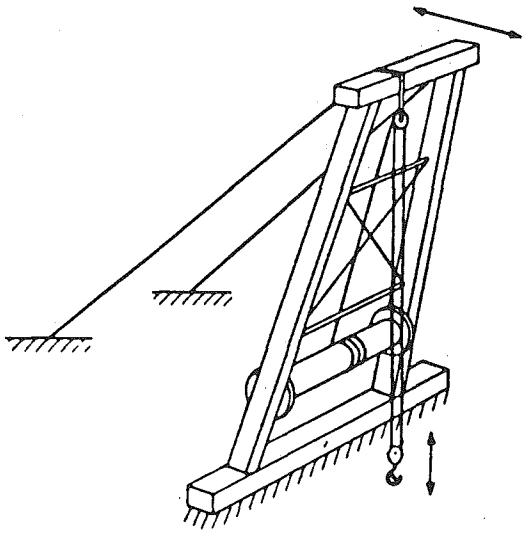
A-FRAME

(3) A "basket derrick" is a derrick without a boom, similar to a gin pole with its base supported by ropes attached to corner posts or other parts of the structure. The base is at a lower elevation than its supports. The location of the base of a basket derrick can be changed by varying the length of the rope supports. The top of the pole is secured with multiple reeved guys to position the top of the pole to the desired location by varying the length of the upper guy lines. The load is raised and lowered by ropes through a sheave or block secured to the top of the pole.



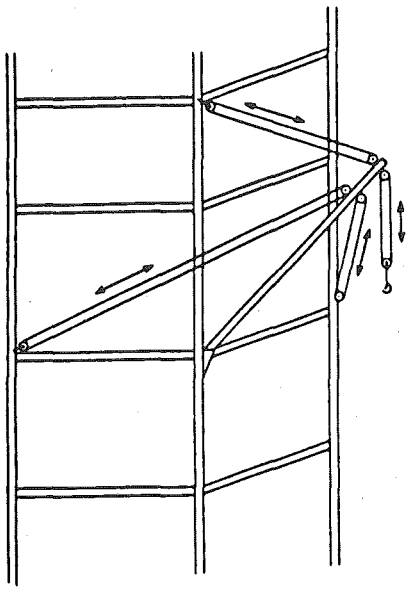
BASKET

(4) "Breast derrick" means a derrick without boom. The mast consists of two side members spread farther apart at the base than at the top and tied together at top and bottom by rigid members. The mast is prevented from tipping forward by guys connected to its top. The load is raised and lowered by ropes through a sheave or block secured to the top crosspiece.



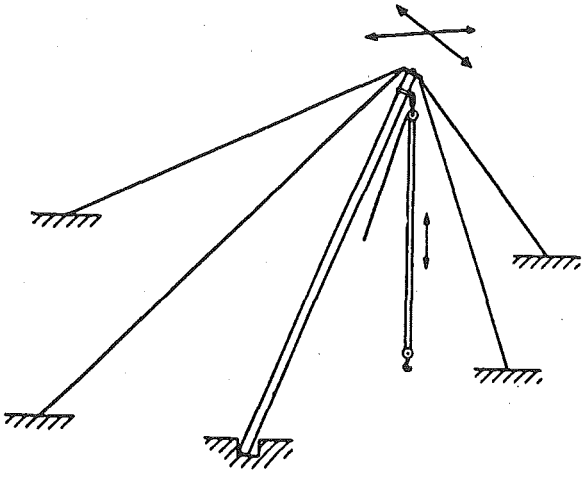
BREAST

(5) "Chicago boom derrick" means a boom which is attached to a structure, and outside upright member of the structure serving as the mast, and the boom being stepped in a fixed socket clamped to the upright. The derrick is complete with load, boom, and boom point swing line falls.



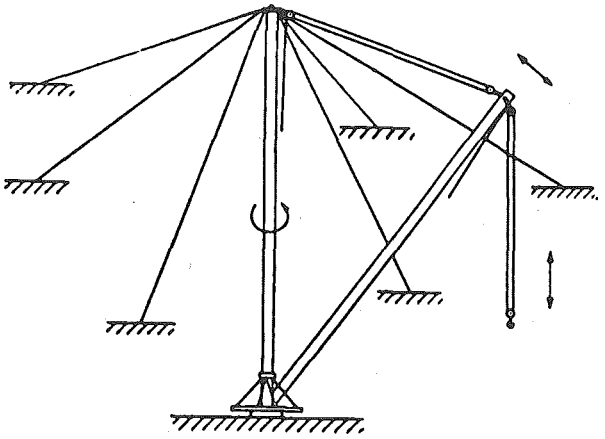
CHICAGO BOOM

(6) A "gin pole derrick" is a derrick without a boom. Its guys are so arranged from its top as to permit leaning the mast in any direction. The load is raised and lowered by ropes reeved through sheaves or blocks at the top of the mast.



GIN POLE

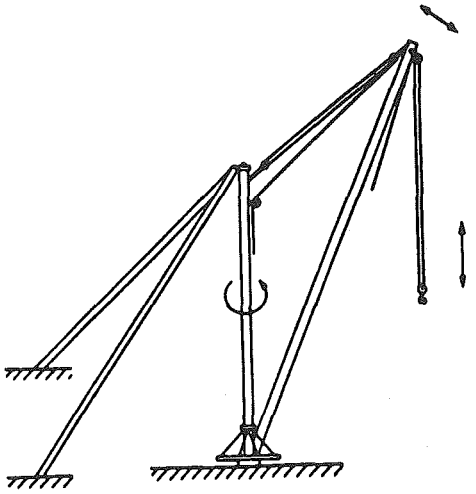
(7) "Guy derrick" means a fixed derrick consisting of a mast capable of being rotated, supported in a vertical position by guys, and a boom whose bottom end is hinged or pivoted to move in a vertical plane with a reeved rope between the head of the mast and the boom point for raising and lowering the boom, and a reeved rope from the boom point for raising and lowering the load.



GUY

(8) "Shearleg derrick" means a derrick without a boom and similar to a breast derrick. The mast, wide at the bottom and narrow at the top, is hinged at the bottom and has its top secured by a multiple reeved guy to permit handling loads at various radii by means of load tackle suspended from the mast top.

(9) A "stiffleg derrick" is a derrick similar to a guy derrick except that the mast is supported or held in place by two or more stiff members, called stifflegs, which are capable of resisting either tensile or compressive forces. Sills are generally provided to connect the lower ends of the stifflegs to the foot of the mast.



STIFF LEG

(10) "Appointed" means assigned specific responsibilities by the employer or the employer's representative.

(11) "ANSI" means the American National Standards Institute.

(12) A boom is a timber or metal section or strut, pivoted or hinged at the heel (lower end) at a location fixed in height on a frame or mast or vertical member, and with its point (upper end) supported by chains, ropes, or rods to the upper end of the frame mast, or

vertical member. A rope for raising and lowering the load is reeved through sheaves or a block at the boom point. The length of the boom shall be taken as the straight line distance between the axis of the foot pin and the axis of the boom point sheave pin, or where used, the axis of the upper load block attachment pin.

(13) "Boom harness" means the block and sheave arrangement on the boom point to which the topping lift cable is reeved for lowering and raising the boom.

(14) The "boom point" is the outward end of the top section of the boom.

(15) "Derrick bullwheel" means a horizontal ring or wheel, fastened to the foot of a derrick, for the purpose of turning the derrick by means of ropes leading from this wheel to a powered drum.

(16) "Designated" means selected or assigned by the employer or employer's representative as being qualified to perform specific duties.

(17) "Eye" means a loop formed at the end of a rope by securing the dead end to the live end at the base of the loop.

(18) A "fiddle block" is a block consisting of two sheaves in the same plane held in place by the same cheek plates.

(19) The "foot bearing" or "foot block" (sill block) is the lower support on which the mast rotates.

(20) A "gudgeon pin" is a pin connecting the mast cap to the mast allowing rotation of the mast.

(21) A "guy" is a rope used to steady or secure the mast or other member in the desired position.

(22) "Load, working" means the external load, in pounds, applied to the derrick, including the weight of load attaching equipment such as load blocks, shackles, and slings.

(23) "Load block, lower" means the assembly of sheaves, pins, and frame suspended by the hoisting rope.

(24) "Load block, upper" means the assembly of sheaves, pins, and frame suspended from the boom.

(25) "Mast" means the upright member of the derrick.

(26) "Mast cap (spider)" means the fitting at the top of the mast to which the guys are connected.

(27) "Reeving" means a rope system in which the rope travels around drums and sheaves.

(28) "Rope" refers to wire rope unless otherwise specified.

(29) "Safety hook" means a hook with a latch to prevent slings or load from accidentally slipping off the hook.

(30) "Side loading" is a load applied at an angle to the vertical plane of the boom.

(31) The "sill" is a member connecting the foot block and stiffleg or a member connecting the lower ends of a double member mast.

(32) A "standby derrick" is a derrick not in regular service which is used occasionally or intermittently as required.

(33) "Stiff leg" means a rigid member supporting the mast at the head.

(34) "Swing" means rotation of the mast and/or boom for movements of loads in a horizontal direction about the axis of rotation.

[Order 73-5, § 296-24-24501, filed 5/9/73 and Order 73-4, § 296-24-24501, filed 5/7/73.]

WAC 296-24-24503 General requirements. (1) Application. This section applies to guy, stiffleg, basket, breast, gin pole, Chicago boom and A-frame derricks of the stationary type, capable of handling loads at variable reaches and powered by hoists through systems of rope reeving, used to perform lifting hook work, single or multiple line bucket work, grab, grapple, and magnet work. Derricks may be permanently installed for temporary use as in construction work. The requirements of this section also apply to any modification of these types which retain their fundamental features, except for floating derricks.

(2) New and existing equipment. All new derricks constructed and installed on or after the effective date of these standards shall meet the design specifications of the "American National Standard Safety Code for Derricks, ANSI B30.6-1969." Derricks constructed prior to the effective date of these standards should be modified to conform to these design specifications by December 31, 1973 unless it can be shown that the derrick cannot feasibly or economically be altered and that the derrick substantially complies with the requirements of this section.

(a) Operating controls shall be marked or an explanation of the controls shall be posted in full view of the operator.

(b) Cranes or derricks having a movable working boom shall have a radius or boom angle indicator installed. This shall be located where the operator can readily read it while in his normal operating position.

(c) Top of boom painted. The top six feet of the boom or jib shall be painted bright yellow.

(3) Designated personnel. Only designated personnel shall be permitted to operate a derrick covered by this section.

[Order 76-6, § 296-24-24503, filed 3/1/76; Order 73-5, § 296-24-24503, filed 5/9/73 and Order 73-4, § 296-24-24503, filed 5/7/73.]

WAC 296-24-24505 Load ratings. (1) Rated load marking. For permanently installed derricks with fixed lengths of boom, guy, and mast, a substantial, durable, and clearly legible rating chart shall be provided with each derrick and securely affixed where it is visible to personnel responsible for the safe operation of the equipment. The chart shall include the following data:

(a) Manufacturer's approved load ratings at corresponding ranges of boom angle or operating radii.

(b) Specific lengths of components on which the load ratings are based.

(c) Required parts for hoist reeving. Size and construction of rope may be shown either on the rating chart or in the operating manual

(2) Nonpermanent installations. For nonpermanent installations, the employer shall provide sufficient information from which capacity charts can be prepared for

the particular installation. The capacity charts shall be located at the derricks or the jobsite office.

[Order 73-5, § 296-24-24505, filed 5/9/73 and Order 73-4, § 296-24-24505, filed 5/7/73.]

WAC 296-24-24507 Inspection. (1) Inspection classification.

(a) Prior to initial use all new and altered derricks shall be inspected to insure compliance with the provisions of these standards.

(b) Inspection procedure for derricks in regular service is divided into two general classifications based upon the intervals at which inspection should be performed. The intervals in turn are dependent upon the nature of the critical components of the derrick and the degree of their exposure to wear, deterioration, or malfunction. The two general classifications are herein designated as frequent and periodic with respective intervals between inspections as defined below:

(i) Frequent inspection – daily to monthly intervals.

(ii) Periodic inspection – 1– to 12–month intervals, or as specified by the manufacturer.

(2) Frequent inspection. Items such as the following shall be inspected for defects at intervals as defined in (1)(b)(i) of this section or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. Deficiencies shall be carefully examined for any safety hazard.

(a) All control mechanisms: Inspect daily for adjustment, wear, and lubrication.

(b) All chords and lacing: Inspect daily, visually.

(c) Tension in guys: Daily.

(d) Plumb of the mast.

(e) Deterioration or leakage in air or hydraulic systems: Daily.

(f) Derrick hooks for deformations or cracks; for hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10° twist from the plane of the unbent hook, refer to WAC 296-24-24511 (3)(c).

(g) Rope reeving; visual inspection for noncompliance with derrick manufacturer's recommendations.

(h) Hoist brakes, clutches, and operating levers: Check daily for proper functioning before beginning operations.

(i) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.

(3) Periodic inspection.

(a) Complete inspections of the derrick shall be performed at intervals as generally defined in (1)(b)(ii) of this section depending upon its activity, severity of service, and environment, or as specifically indicated below. These inspections shall include the requirements of (2) of this section and in addition, items such as the following. Deficiencies shall be carefully examined and a determination made as to whether they constitute a safety hazard:

(i) Structural members for deformations, cracks, and corrosion.

(ii) Bolts or rivets for tightness.

(iii) Parts such as pins, bearings, shafts, gears, sheaves, drums, rollers, locking and clamping devices, for wear, cracks, and distortion.

(iv) Gudgeon pin for cracks, wear, and distortion each time the derrick is to be erected.

(v) Power plants for proper performance and compliance with applicable safety requirements.

(vi) Hooks: Magnetic particle or other suitable crack detecting inspection should be performed at least once each year.

(b) Foundation or supports shall be inspected for continued ability to sustain the imposed loads.

(4) Derricks not in regular use.

(a) A derrick which has been idle for a period of 1 month or more, but less than 6 months, shall be given an inspection conforming with requirements of (2) of this section and WAC 296-24-24513(2) before placing in service.

(b) A derrick which has been idle for a period of over 6 months shall be given a complete inspection conforming with requirements of (2) and (3) of this section and WAC 296-24-24513(3) before placing in service.

(c) Standby derricks shall be inspected at least semiannually in accordance with requirements of (2) of this section and WAC 296-24-24513(3). Those exposed to adverse environment should be inspected more frequently.

[Order 73-5, § 296-24-24507, filed 5/9/73 and Order 73-4, § 296-24-24507, filed 5/7/73.]

WAC 296-24-24509 Testing. (1) Operational tests. Prior to initial use all new and altered derricks shall be tested to ensure compliance with this section including the following functions:

(a) Load hoisting and lowering.

(b) Boom up and down.

(c) Swing.

(d) Operation of clutches and brakes of hoist.

(2) Anchorages. All anchorages shall be approved by the appointed person. Rock and hairpin anchorages may require special testing.

[Order 73-5, § 296-24-24509, filed 5/9/73 and Order 73-4, § 296-24-24509, filed 5/7/73.]

WAC 296-24-24511 Maintenance. (1) Preventive maintenance. A preventive maintenance program based on the derrick manufacturer's recommendations shall be established.

(2) Maintenance procedure.

(a) Before adjustments and repairs are started on a derrick the following precautions shall be taken:

(i) The derrick to be repaired shall be arranged so it will cause the least interference with other equipment and operations in the area.

(ii) All hoist drum dogs shall be engaged.

(iii) The main or emergency switch shall be locked in the open position, if an electric hoist is used.

(iv) Warning or out of order signs shall be placed on the derrick and hoist.

(v) The repairs of booms or derricks shall either be made when the booms are lowered and adequately supported or safely tied off.

(vi) A good communication system shall be set up between the hoist operator and the appointed individual in charge of the derrick operations before any work on the equipment is started.

(vii) Welding repairs shall be approved by an appointed person.

(b) After adjustments and repairs have been made the derrick shall not be operated until all guards have been reinstalled, safety devices reactivated, and maintenance equipment removed.

(3) Adjustments and repairs.

(a) Any unsafe conditions disclosed by inspection shall be corrected before operation of the derrick is resumed.

(b) Adjustments shall be maintained to assure correct functioning of components.

(c) Repairs or replacements shall be provided promptly as needed for safe operation. The following are examples of conditions requiring prompt repair or replacement:

(i) Hooks showing defects described in WAC 296-24-24507 (2)(f) shall be discarded.

(ii) All critical parts which are cracked, broken, bent, or excessively worn.

(iii) Pitted or burned electrical contacts should be corrected only by replacement and in sets. Controller parts should be lubricated as recommended by the manufacturer.

(iv) All replacement and repaired parts shall have at least the original safety factor.

[Order 73-5, § 296-24-24511, filed 5/9/73 and Order 73-4, § 296-24-24511, filed 5/7/73.]

WAC 296-24-24513 Rope inspection. (1) Running ropes. A thorough inspection of all ropes in use shall be made at least once a month and a full written, dated, and signed report of rope condition kept on file where readily available. Any deterioration, resulting in appreciable loss of original strength, such as described below, shall be carefully noted and determination made as to whether further use of the rope would constitute a safety hazard:

(a) Reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires.

(b) A number of broken outside wires and the degree of distribution or concentration of such broken wires.

(c) Worn outside wires.

(d) Corroded or broken wires at end connections.

(e) Corroded, cracked, bent, worn, or improperly applied end connections.

(f) Severe kinking, crushing, cutting, or unstranding.

(2) Idle ropes. All rope which has been idle for a period of a month or more due to shutdown or storage of derrick on which it is installed shall be given a thorough inspection before it is placed in service. This inspection shall be for all types of deterioration. A written and dated report of the rope condition shall be available.

(3) Nonrotating ropes. Particular care shall be taken in the inspection of nonrotating rope.

Note: Limited travel ropes. Heavy wear and/or broken wires may occur in sections in contact with equalizer sheaves or other sheaves where rope travel is limited, or with saddles. Particular care shall be taken to inspect ropes at these locations.

[Order 73-5, § 296-24-24513, filed 5/9/73 and Order 73-4, § 296-24-24513, filed 5/7/73.]

WAC 296-24-24515 Operations of derricks. Derrick operation shall be directed only by the individual specifically designated for that purpose.

[Order 73-5, § 296-24-24515, filed 5/9/73 and Order 73-4, § 296-24-24515, filed 5/7/73.]

WAC 296-24-24517 Handling the load. (1) Size of load.

(a) No derrick shall be loaded beyond the rated load.

(b) When loads approach the maximum rating of the derrick, it shall be ascertained that the weight of the load has been determined within plus or minus 10 percent before it is lifted.

(2) Attaching the load.

(a) The hoist rope shall not be wrapped around the load.

(b) The load shall be attached to the hook by means of slings or other suitable devices.

(3) Moving the load.

(a) The load shall be well secured and properly balanced in the sling or lifting device before it is lifted more than a few inches.

(b) Before starting to hoist, the following conditions shall be noted:

(i) Hoist rope shall not be kinked.

(ii) Multiple part lines shall not be twisted around each other.

(iii) The hook shall be brought over the load in such a manner as to prevent swinging.

(iv) If there is a slack rope condition, it should be determined that the rope is properly seated on the drum and in the sheaves.

(c) During hoisting, care shall be taken that:

(i) There is no sudden acceleration or deceleration of the moving load.

(ii) Load does not contact any obstructions.

(d) A derrick shall not be used for side loading except when specifically authorized by a responsible person who has determined that the various structural components will not be overstressed.

(e) No hoisting, lowering, or swinging shall be done while anyone is on the load or hook.

(f) The operator shall avoid carrying loads over people.

(g) The operator shall test the brakes each time a load approaching the rated load is handled by raising it a few inches and applying the brakes.

(h) Neither the load nor boom shall be lowered below the point where less than two full wraps of rope remain on their respective drums.

(i) When rotating a derrick, sudden starts and stops shall be avoided. Rotational speed shall be such that the

load does not swing out beyond the radius at which it can be controlled.

(j) Boom and hoisting rope systems shall not be twisted.

(4) Holding the load.

(a) The operator shall not be allowed to leave his position at the controls while the load is suspended.

(b) People should not be permitted to stand or pass under a load on the hook.

(c) If the load must remain suspended for any considerable length of time, a dog, or pawl and ratchet, or other equivalent means, rather than the brake alone, shall be used to hold the load.

(5) Use of winch heads.

(a) Ropes shall not be handled on a winch head without the knowledge of the operator.

(b) While a winch head is being used, the operator shall be within convenient reach of the power unit control lever.

(6) Securing boom. Dogs, pawls, or other positive holding mechanism on the hoist shall be engaged. When not in use, the derrick boom shall:

(a) Be laid down;

(b) Be secured to a stationary member, as nearly under the head as possible, by attachment of a sling to the load block; or

(c) Be hoisted to a vertical position and secured to the mast.

[Order 73-5, § 296-24-24517, filed 5/9/73 and Order 73-4, § 296-24-24517, filed 5/7/73.]

WAC 296-24-24519 Other requirements. (1) Guards.

(a) Exposed moving parts, such as gears, ropes, setscrews, projecting keys, chains, chain sprockets, and reciprocating components, which constitute a hazard under normal operating conditions shall be guarded.

(b) Guards shall be securely fastened.

(c) Each guard shall be capable of supporting without permanent distortion, the weight of a 200-pound person unless the guard is located where it is impossible for a person to step on it.

(2) Hooks.

(a) Hooks shall meet the manufacturer's recommendations and shall not be overloaded.

(b) Safety latch type hooks shall be used or the hooks shall be moused.

(3) Fire extinguishers.

(a) A carbon dioxide, dry chemical, or equivalent fire extinguisher shall be kept in the immediate vicinity of the derrick.

(b) Operating and maintenance personnel shall be familiar with the use and care of the fire extinguishers proved.

(4) Refueling.

(a) Refueling with portable containers shall be done with Underwriters' Laboratory, Inc. (UL), or Factory Mutual Laboratories approved, or equivalent, safety type containers equipped with automatic closing spout and flame arrester.

(b) Machines shall not be refueled with the engine running.

(5) Operating near electric powerlines.

(a) Except where the electrical distribution and transmission lines have been deenergized and visibility grounded at point of work or where insulating barriers not a part of or an attachment to the derrick have been erected to prevent physical contact with the lines, derricks shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(i) For lines rated 50 kv. or below minimum clearance between the lines and any part of the derrick or load shall be 10 feet.

(ii) For lines rated over 50 kv. minimum clearance between lines and any part of the derrick or load shall be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or use twice the length of the line insulator, but never less than 10 feet.

(b) Cage-type boom guards, insulating links, or proximity warning devices may be used on derricks, but the use of such devices shall not operate to alter the requirements of (5)(a) of this section.

(c) Before the commencement of operations near electrical lines, the owners of the lines or their authorized representatives shall be notified and provided with pertinent information. The owner's cooperation shall be requested.

(d) Any overhead wire shall be considered to be an energized line until the owner of the line or their authorized representatives state that it is deenergized.

(6) Cab or operating enclosure.

(a) Necessary clothing and personnel belongings shall be stored in such a manner as to not interfere with access or operation.

(b) Tools, oilcans, waste, extra fuses, and other necessary articles shall be stored in the toolbox, and shall not be permitted to lie loose in or about the cab or operating enclosure.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-24519, filed 7/31/79; Order 73-5, § 296-24-24519, filed 5/9/73 and Order 73-4, § 296-24-24519, filed 5/7/73.]

WAC 296-24-260 Helicopters. (1) Helicopter regulations. Helicopter cranes shall be expected to comply with any applicable regulations of the Federal Aviation Administration.

(2) Briefing. Prior to each day's operation, a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

(3) Slings and tag lines. Load shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

(4) Cargo hooks. All electrically operated cargo hooks shall have the electrical activating device so designed and installed as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load.

The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

(5) Personal protective equipment.

(a) Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chin straps.

(b) Loose-fitting clothing likely to flap in the downwash and thus be snagged on hoist line shall not be worn.

(6) Loose gear and objects. Every practical precaution shall be taken to provide for the protection of the employees from flying objects in the rotor downwash. All loose gear within 100 feet of the place of lifting the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

(7) Housekeeping. Good housekeeping shall be maintained in all helicopter loading and unloading areas.

(8) Operator responsibility. The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

(9) Hooking and unhooking loads. Employees shall not perform work under hovering craft except for that limited period of time necessary to guide, secure and unhook loads, or to hook loads. Regardless of whether the hooking or unhooking of a load takes place on the ground or a flat roof, or other location in an elevated work position in structural members, a safe means of access and egress, to include an unprogrammed emergency escape route or routes, shall be provided for the employees who are hooking or unhooking loads.

(10) Static charge. Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

(11) Weight limitation. The weight of an external load shall not exceed the manufacturer's rating.

(12) Ground lines. Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

(13) Visibility. When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

(14) Signal systems. Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Handsignals shall be as shown in Figure L-1.

(15) Approach distance. No unauthorized person shall be allowed to approach within 50 feet of the helicopter when the rotor blades are turning.

(16) Approaching helicopter. Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin rearward unless authorized by the helicopter operator to work there.

(17) Personnel. Sufficient ground personnel shall be provided when required for safe helicopter loading and unloading operations.

(18) Communications. There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalman during the period of loading and unloading. This signalman shall be distinctly recognizable from other ground personnel.

(19) Fires. Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

[Order 76-28, § 296-24-260, filed 9/28/76.]

WAC 296-24-293 "A" frames. (1) All timbers for "A" frames shall be of correct size, length, and condition to sustain the maximum contemplated loads.

(2) "A" frame timbers shall be braced with two spreaders spaced one-quarter the length of the "A" frame from each end. Cross bracing shall cross between the two spreaders. Bracing material shall be not less than two-thirds of the rated strength of the "A" frame timbers.

(3) Tie rods (staybolts) of not less than one-twelfth the diameter of the main "A" frame timbers shall be used. Tie rods shall be placed directly above the upper spreader and directly below the lower spreader. Ends of bolts shall be secured at each end with malleable washers and nuts.

(4) The base of the "A" frame shall be securely anchored. Elevating type "A" frames shall be set in pinion-type sockets. Pinion bases shall be securely anchored.

(5) Guy lines shall be of sufficient strength to carry the load imposed upon them and shall be securely fastened in place.

[Order 73-5, § 296-24-293, filed 5/9/73 and Order 73-4, § 296-24-293, filed 5/7/73.]

WAC 296-24-294 Rigging.

[Order 73-5, § 296-24-294, filed 5/9/73 and Order 73-4, § 296-24-294, filed 5/7/73.]

WAC 296-24-29401 Wire rope. (1) Safe loads. Whenever used in connection with work, employment, occupations or uses to which these standards are applicable, wire rope shall not be subjected to loads in excess of one-fifth the breaking load as given in the schedule of the cable manufacturer. Except as required in standard for material hoists.

(2) Condemned. When cables deteriorate through rust, wear, broken wires, undue strain or other conditions to the extent of fifteen percent of their original strength, use of cables shall be discontinued.

(3) Straps and ribbons. The strap or steel ribbon type of cable shall not be used in the suspension of scaffolding.

(4) Inspections. There shall be not less than monthly inspection of all wire rope in use, and all wire rope must be inspected before put into use.

(5) Fastening. The following methods of fastening and attaching wire rope shall be adhered to:

(a) Sockets. The end of wire rope to be set into socket fittings held securely with molten babbit or zinc (not lead). The wires of the cable shall be frayed out and each wire bent toward the outside of socket, so that the end of each wire projects well into the depth of the socket. This method of fastening cables should be left in the hands of an experienced workman in this kind of work.

(b) Wrapping. Thimbles spliced into rope and the splice securely wrapped.

(c) Bolted. Thimbles inserted and held in place by at least a three bolt clamp or three U-bolt clips. Clamps shall be of standard size for the sizes of the cable in use.

(d) Lashing. For temporary work, by passing rope at least twice around large object such as a post, avoiding sharp points and carrying the end back several feet and securing it by clamps, clips or lashing to the cable.

[Order 76-29, § 296-24-29401, filed 9/30/76; Order 73-5, § 296-24-29401, filed 5/9/73 and Order 73-4, § 296-24-29401, filed 5/7/73.]

WAC 296-24-29403 Hemp rope. (1) Quality. Whenever hemp rope is used it shall be first grade long fiber Manila hemp rope.

(2) Strength. Rope shall not be used to support loads in excess of those given in table for hemp and Manila rope.

(3) Lashed. Supporting ropes shall be double lashed at each point of suspension.

(4) Pads. Where supporting ropes are brought over sharp corners of steel, stone, or other material liable to cut the rope, or are in any other way subject to abrasion, they shall be protected at such points by the use of bagging, wooden blocks or other protective padding.

(5) Knot ends. Rope knots shall have their loose and free ends lashed to the standing part in order to prevent their becoming untied.

(6) Inspection. All ropes shall be inspected before used.

(7) Defective rope. Rope badly frayed, rotted, exposed to the action of acid or caustic, or otherwise defective and unsafe, shall be condemned and destroyed to avoid all possibility of future use by mistake.

[Order 73-5, § 296-24-29403, filed 5/9/73 and Order 73-4, § 296-24-29403, filed 5/7/73.]

WAC 296-24-29405 Hemp and wire rope slings. (1) Inspection. All rope slings shall be inspected thoroughly and regularly at intervals of not more than one month, and when not in use, shall be stored in a dry place.

(2) Pads. Rope slings shall be protected with pads or blocks when wrapped around sharp edges of structural shapes, casting, etc.

(3) Slip-noose. Slings shall not be used in single strand slip-noose form.

(4) Acids. Hemp rope shall not be used as slings for handling objects contaminated with acid.

(5) How attached. Hand-ropes (guide-ropes) shall not be attached to slings but to hoisting tackle, or (only when necessary) attached to the object handled.

(6) Strength. All slings shall be of sufficient strength for handling the imposed loads. See tables given for hemp and wire ropes.

(7) Double slings. Double slings shall be used on all horizontal loads over twelve feet in length, and the distance between the points where slings are attached shall be sufficient to prevent the load from tipping up endwise.

(8) Spreaders. Spreaders shall be used where there is a danger of sling ends or "hitches" slipping together.

(9) Defective—Destroyed. Defective and unsafe slings shall be destroyed in order to avoid possibility of their being used by mistake.

[Order 73-5, § 296-24-29405, filed 5/9/73 and Order 73-4, § 296-24-29405, filed 5/7/73.]

WAC 296-24-29407 Guys. Guy wires and ropes shall be of sufficient strength to carry the load imposed upon them and shall be securely fastened in place.

[Order 73-5, § 296-24-29407, filed 5/9/73 and Order 73-4, § 296-24-29407, filed 5/7/73.]

WAC 296-24-29409 Thimbles. Wherever rope is permanently fastened by a single wrap to a metal object less in diameter or shortest measurement than three times the diameter of the rope, a galvanized thimble (of size intended for the rope) shall be inserted between the object and the loop of the rope.

[Order 73-5, § 296-24-29409, filed 5/9/73 and Order 73-4, § 296-24-29409, filed 5/7/73.]

WAC 296-24-29411 Blocks and falls. Blocks and falls shall be carefully inspected before being used. Blocks shall be of substantial construction and maintained in good condition while in use. Blocks shall fit the sizes of ropes they carry and shall not chafe or abrade the ropes running through them.

[Order 73-5, § 296-24-29411, filed 5/9/73 and Order 73-4, § 296-24-29411, filed 5/7/73.]

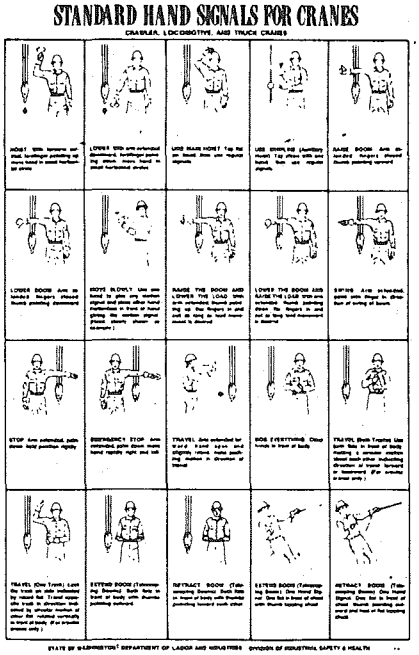
WAC 296-24-29413 Chains and cables. (1) If at any time any three foot length of chain is found to have stretched one-third the length of a link it shall be discarded.

(2) The practice of placing bolts or nails between two links to shorten chains is prohibited.

(3) Splicing broken chains by inserting a bolt between two links with the heads of the bolt and the nut sustaining the load, or passing one link through another and inserting a bolt or nail to hold it, is prohibited.

(4) Wherever annealing of chains is attempted, it shall be done in properly equipped annealing furnaces and under the direct supervision of a competent person thoroughly versed in heat treating.

(5) Cables shall be periodically inspected. A copy of the report of the inspections of each running cable shall be filed in a place readily accessible to the department, or authorized representative.



CRANE SIGNALS

1. Do not remove the load or the crane unless you understand the floor signal clearly.
2. Be careful that the load does not swing to injure your hook–on man/woman or other floorpersons; make certain they are in the clear.
3. When raising or lowering the load, see that it will safely clear adjacent stockpiles or machinery.
4. Never pick up a load greater than the capacity of your crane. In case of doubt, call your foreperson.
5. Never do ANYTHING that is not safe.
6. Co–operate with your hook–on or floorperson. You and he/she are a team handling a valuable piece of equipment—Never let it become a hazard.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–29413, filed 11/13/80; Order 73–5, § 296–24–29413, filed 5/9/73 and Order 73–4, § 296–24–29413, filed 5/7/73.]

WAC 296–24–29415 Slings. This section applies to slings used in conjunction with other material handling equipment for the movement of material by hoisting, in employments covered by this chapter. The types of slings covered are those made from alloy steel chain, wire rope, metal mesh, natural or synthetic fiber rope (conventional three strand construction), and synthetic web (nylon, polyester, and polypropylene).

[Order 76–6, § 296–24–29415, filed 3/1/76.]

WAC 296–24–29417 Definitions. (1) Angle of loading. Means the inclination of a leg or branch of a sling measured from the horizontal or vertical plane as shown in Fig. D–5: *Provided,* That an angle of loading of five degrees or less from the vertical may be considered a vertical angle of loading.

(2) Basket hitch. Means a sling configuration whereby the sling is passed under the load and has both ends, end attachments, eyes or handles on the hook or a single master link.

(3) Braided wire rope. Means a wire rope formed by plaiting component wire ropes.

(4) Bridle wire rope sling. Means a sling composed of multiple wire rope legs with the top ends gathered in a fitting that goes over the lifting hook.

(5) Cable laid endless sling–mechanical joint. Means a wire rope sling made endless by joining the ends of a single length of cable laid rope with one or more metallic fittings.

(6) Cable laid grommet–hand tucked. Means an endless wire rope sling made from one length of rope wrapped six times around a core formed by hand tucking the ends of the rope inside the six wraps.

(7) Cable laid rope. Means a wire rope composed of six wire ropes wrapped around a fiber or wire rope core.

(8) Cable laid rope sling–mechanical joint. Means a wire rope sling made from a cable laid rope with eyes fabricated by pressing or swagging one or more metal sleeves over the rope junction.

(9) Choker hitch. Means a sling configuration with one end of the sling passing under the load and through an end attachment, handle or eye on the other end of the sling.

(10) Coating. Means an elastomer or other suitable material applied to a sling or to a sling component to impart desirable properties.

(11) Cross rod. Means a wire used to join spirals of metal mesh to form a complete fabric. (See Fig. D–2.)

(12) Designated. Means selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

(13) Equivalent entity. Means a person or organization (including an employer) which, by possession of equipment, technical knowledge and skills, can perform with equal competence the same repairs and tests as the person or organization with which it is equated.

(14) Fabric (metal mesh). Means the flexible portion of a metal mesh sling consisting of a series of transverse coils and cross rods.

(15) Female handle (choker). Means a handle with a handle eye and a slot of such dimension as to permit passage of a male handle thereby allowing the use of a metal mesh sling in a choker hitch. (See Fig. D–1.)

(16) Handle. Means a terminal fitting to which metal mesh fabric is attached. (See Fig. D–1.)

(17) Handle eye. Means an opening in a handle of a metal mesh sling shaped to accept a hook, shackle or other lifting device. (See Fig. D–1.)

(18) Hitch. Means a sling configuration whereby the sling is fastened to an object or load, either directly to it or around it.

(19) Link. Means a single ring of a chain.

(20) Male handle (triangle). Means a handle with a handle eye.

(21) Master coupling link. Means an alloy steel welded coupling link used as an intermediate link to join alloy steel chain to master links. (See Fig. D–3.)

(22) Master link or gathering ring. Means a forged or welded steel link used to support all members (legs) of

an alloy steel chain sling or wire rope sling. (See Fig. D–3.)

(23) Mechanical coupling link. Means a nonwelded, mechanically closed steel link used to attach master links, hooks, etc., to alloy steel chain.

(24) Proof load. Means the load applied in performance of a proof test.

(25) Proof test. Means a nondestructive tension test performed by the sling manufacturer or an equivalent entity to verify construction and workmanship of a sling.

(26) Rated capacity or working load limit. Means the maximum working load permitted by the provisions of this section.

(27) Reach. Means the effective length of an alloy steel chain sling measured from the top bearing surface of the upper terminal component to the bottom bearing surface of the lower terminal component.

(28) Selvage edge. Means the finished edge of synthetic webbing designed to prevent unraveling.

(29) Sling. Means an assembly which connects the load to the material handling equipment.

(30) Sling manufacturer. Means a person or organization that assembles sling components into their final form for sale to users.

(31) Spiral. Means a single transverse coil that is the basic element from which metal mesh is fabricated. (See Fig. D–2.)

(32) Strand laid endless sling–mechanical joint. Means a wire rope sling made endless from one length of rope with the ends joined by one or more metallic fittings.

(33) Strand laid grommet–hand tucked. Means an endless wire rope sling made from one length of strand wrapped six times around a core formed by hand tucking the ends of the strand inside the six wraps.

(34) Strand laid rope. Means a wire rope made with strands (usually six or eight) wrapped around a fiber core, wire strand core, or independent wire rope core (IWRC).

(35) Vertical hitch. Means a method of supporting a load by a single, vertical part or leg of the sling. (See Fig. D–4.)

[Order 76–6, § 296–24–29417, filed 3/1/76.]

WAC 296–24–29419 Safe operating practices. Whenever any sling is used, the following practices shall be observed:

(1) Slings that are damaged or defective shall not be used.

(2) Slings shall not be shortened with knots or bolts or other makeshift devices.

(3) Sling legs shall not be kinked.

(4) Slings shall not be loaded in excess of their rated capacities.

(5) Slings used in a basket hitch shall have the loads balanced to prevent slippage.

(6) Slings shall be securely attached to their loads.

(7) Slings shall be padded or protected from the sharp edges of their loads.

(8) Suspended loads shall be kept clear of all obstructions.

(9) All employees shall be kept clear of loads about to be lifted and of suspended loads.

(10) Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.

(11) Shock loading is prohibited.

(12) A sling shall not be pulled from under a load when the load is resting on the sling.

[Order 76–6, § 296–24–29419, filed 3/1/76.]

WAC 296–24–29421 Inspections. Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

[Order 76–6, § 296–24–29421, filed 3/1/76.]

WAC 296–24–29423 Alloy steel chain slings. (1) Sling identification. Alloy steel chain slings shall have permanently affixed durable identification stating size, grade, rated capacity and reach.

(2) Attachments.

(a) Hooks, rings, oblong links, pear shaped links, welded or mechanical coupling links or other attachments shall have a rated capacity at least equal to that of the alloy steel chain with which they are used or the sling shall not be used in excess of the rated capacity of the weakest component.

(b) Makeshift links or fasteners formed from bolts or rods, or other such attachments, shall not be used.

(3) Inspections.

(a) In addition to the inspection required by WAC 296–24–29421, a thorough periodic inspection of alloy steel chain slings in use shall be made on a regular basis, to be determined on the basis of:

(i) Frequency of sling use;

(ii) Severity of service conditions;

(iii) Nature of lifts being made; and

(iv) Experience gained on the service life of slings used in similar circumstances. Such inspections shall in no event be at intervals greater than once every 12 months.

(b) The employer shall make and maintain a record of the most recent month in which each alloy steel chain sling was thoroughly inspected, and shall make such record available for examination.

(c) The thorough inspection of alloy steel chain slings shall be performed by a competent person designated by the employer, and shall include a thorough inspection for wear, defective welds, deformation and increase in length. Where such defects or deterioration are present, the sling shall be immediately removed from serve.

(4) Proof testing. The employer shall ensure that before use, each new, repaired, or reconditioned alloy steel chain sling, including all welded components in the sling assembly, shall be proof tested by the sling manufacturer or equivalent entity, in accordance with paragraph 5.2 of the American Society of Testing and Materials Specification A391–65 (ANSI G61.1–1968). The employer

shall retain a certificate of the proof test and shall make it available for examination.

(5) Sling use. Alloy steel chain slings shall not be used with loads in excess of the rated capacities prescribed in Table D-1. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

(6) Safe operating temperatures. Alloy steel chain slings shall be permanently removed from service if they are heated above 1000°F. When exposed to service temperatures in excess of 600°F maximum working load limits permitted in Table D-1 shall be reduced in accordance with the chain or sling manufacturer's recommendations.

(7) Repairing and reconditioning alloy steel chain slings.

(a) Worn or damaged alloy steel chain slings or attachments shall not be used until repaired. When welding or heat testing is performed, slings shall not be used unless repaired, reconditioned and proof tested by the sling manufacturer or an equivalent entity.

(b) Mechanical coupling links or low carbon steel repair links shall not be used to repair broken lengths of chain.

(8) Effects of wear. If the chain size at any point of any links is less than that stated in Table D-2, the sling shall be removed from service.

(9) Deformed attachments.

(a) Alloy steel chain sling with cracked or deformed master links, coupling links or other components shall be removed from service.

(b) Slings shall be removed from service if hooks are cracked, have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

[Order 76-29, § 296-24-29423, filed 9/30/76; Order 76-6, § 296-24-29423, filed 3/1/76.]

WAC 296-24-29425 Wire rope slings. (1) Sling use. Wire rope slings shall not be used with loads in excess of the rated capacities shown in Tables D-3 through D-14. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Minimum sling lengths.

(a) Cable laid and 6x19 and 6x37 slings shall have a minimum clear length of wire rope 10 times the component rope diameter between splices, sleeves or end fittings.

(b) Braided slings shall have a minimum clear length of wire rope 40 times the component rope diameter between the loops or end fittings.

(c) Cable laid grommets, strand laid grommets and endless slings shall have a minimum circumferential length of 96 times their body diameter.

(3) Safe operating temperatures. Fiber core wire rope slings of all grades shall be permanently removed from service if they are exposed to temperatures in excess of 200°F. When nonfiber core wire rope slings of any grade are used at temperatures above 400°F or below minus 60°F, recommendations of the sling manufacturer regarding use at that temperature shall be followed.

(4) End attachments.

(a) Welding of end attachments, except covers to thimbles, shall be performed prior to the assembly of the sling.

(b) All welded end attachments shall not be used unless proof tested by the manufacturer or equivalent entity at twice their rated capacity prior to initial use. The employer shall retain a certificate of the proof test, and make it available for examination.

(5) Removal from service. Wire rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Ten randomly distributed broken wires in one rope lay, or five broken wires in one strand in one rope lay.

(b) Wear or scraping of one-third the original diameter of outside individual wires.

(c) Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure.

(d) Evidence of heat damage.

(e) End attachments that are cracked, deformed or worn.

(f) Hooks that have been opened more than 15 percent of the normal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook.

(g) Corrosion of the rope or end attachments.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-29425, filed 7/31/79; Order 76-6, § 296-24-29425, filed 3/1/76.]

WAC 296-24-29427 Metal mesh slings. (1) Sling marking. Each metal mesh sling shall have permanently affixed to it a durable marking that states the rated capacity for vertical basket hitch and choker hitch loadings.

(2) Handles. Handles shall have a rated capacity at least equal to the metal fabric and exhibit no deformation after proof testing.

(3) Attachments of handles to fabric. The fabric and handles shall be joined so that:

(a) The rated capacity of the sling is not reduced.

(b) The load is evenly distributed across the width of the fabric.

(c) Sharp edges will not damage the fabric.

(4) Sling coatings. Coatings which diminish the rated capacity of a sling shall not be applied.

(5) Sling testing. All new and repaired metal mesh slings, including handles, shall not be used unless proof tested by the manufacturer or equivalent entity at a minimum of 1-1/2 times their rated capacity. Elastomer impregnated slings shall be proof tested before coating.

(6) Proper use of metal mesh slings. Metal mesh slings shall not be used to lift loads in excess of their rated capacities as prescribed in Table D-15. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

(7) Safe operating temperatures. Metal mesh slings which are not impregnated with elastomers may be used in a temperature range from minus 20°F to plus 550°F

without decreasing the working load limit. Metal mesh slings impregnated with polyvinyl chloride or neoprene may be used only in a temperature range from zero degrees to plus 200°F. For operations outside these temperature ranges or for metal mesh slings impregnated with other materials, the sling manufacturer's recommendations shall be followed.

(8) Repairs.

(a) Metal mesh slings which are repaired shall not be used unless repaired by a metal mesh sling manufacturer or an equivalent entity.

(b) Once repaired, each sling shall be permanently marked or tagged, or a written record maintained, to indicate the date and nature of the repairs and the person or organization that performed the repairs. Records of repairs shall be made available for examination.

(9) Removal from service. Metal mesh slings shall be immediately removed from service if any of the following conditions are present:

(a) A broken weld or broken brazed joint along the sling edge.

(b) Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion.

(c) Lack of flexibility due to distortion of the fabric.

(d) Distortion of the female handle so that the depth of the slot is increased more than 10 percent.

(e) Distortion of either handle so that the width of the eye is decreased more than 10 percent.

(f) A 15 percent reduction of the original cross sectional area of metal at any point around the handle eye.

(g) Distortion of either handle out of its plane.

[Order 76-6, § 296-24-29427, filed 3/1/76.]

WAC 296-24-29429 Natural and synthetic fiber rope slings. (1) Sling use.

(a) Fiber rope slings made from conventional three strand construction fiber rope shall not be used with loads in excess of the rated capacities prescribed in Tables D-16 through D-19.

(b) Fiber rope slings shall have a diameter of curvature meeting at least the minimums specified in Figs. D-4 and D-5.

(c) Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(2) Safe operating temperatures. Natural and synthetic fiber rope slings, except for wet frozen slings, may be used in a temperature range from minus 20°F to plus 180°F without decreasing the working load limit. For operations outside this temperature range and for wet frozen slings, the sling manufacturer's recommendations shall be followed.

(3) Splicing. Spliced fiber rope slings shall not be used unless they have been spliced in accordance with the following minimum requirements and in accordance with any additional recommendations of the manufacturer:

(a) In manila rope, eye splices shall consist of at least three full tucks, and short splices shall consist of at least six full tucks, three on each side of the splice center line.

(b) In synthetic fiber rope, eye splices shall consist of at least four full tucks, and short splices shall consist of at least eight full tucks, four on each side of the center line.

(c) Strand end tails shall not be trimmed flush with the surface of the rope immediately adjacent to the full tucks. This applies to all types of fiber rope and both eye and short splices. For fiber rope under one inch in diameter, the tail shall project at least six rope diameters beyond the last full tuck. For fiber rope one inch in diameter and larger, the tail shall project at least six inches beyond the last full tuck. Where a projecting tail interferes with the use of the sling, the tail shall be tapered and spliced into the body of the rope using at least two additional tucks (which will require a tail length of approximately six rope diameters beyond the last full tuck).

(d) Fiber rope slings shall have a minimum clear length of rope between eye splices equal to 10 times the rope diameter.

(e) Knots shall not be used in lieu of splices.

(f) Clamps not designed specifically for fiber ropes shall not be used for splicing.

(g) For all eye splices, the eye shall be of such size to provide an included angle of not greater than 60 degrees at the splice when the eye is placed over the load or support.

(4) End attachments. Fiber rope slings shall not be used if end attachments in contact with the rope have sharp edges or projections.

(5) Removal from service. Natural and synthetic fiber rope slings shall be immediately removed from service if any of the following conditions are present:

(a) Abnormal wear.

(b) Powdered fiber between strands.

(c) Broken or cut fibers.

(d) Variations in the size or roundness of strands.

(e) Discoloration or rotting.

(f) Distortion of hardware in the sling.

(6) Repairs. Only fiber rope slings made from new rope shall be used. Use of repaired or reconditioned fiber rope slings is prohibited.

[Order 76-6, § 296-24-29429, filed 3/1/76.]

WAC 296-24-29431 Synthetic web slings. (1) Sling identification. Each sling shall be marked or coded to show the rated capacities for each type of hitch and type of synthetic web material.

(2) Webbing. Synthetic webbing shall be of uniform thickness and width and selvage edges shall not be split from the webbing's width.

(3) Fittings. Fittings shall be:

(a) Of a minimum breaking strength equal to that of the sling; and

(b) Free of all sharp edges that could in any way damage the webbing.

(4) Attachment of end fittings to webbing and formation of eyes. Stitching shall be the only method used to attach end fittings to webbing and to form eyes. The thread shall be in an even pattern and contain a sufficient number of stitches to develop the full breaking strength of the sling.

(5) Sling use. Synthetic web slings illustrated in Figure D–6 shall not be used with loads in excess of the rated capacities specified in Tables D–20 through D–22. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

(6) Environmental conditions. When synthetic web slings are used, the following precautions shall be taken:

(a) Nylon web slings shall not be used where fumes, vapors, sprays, mists or liquids of acids or phenolics are present.

(b) Polyester and polypropylene web slings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(c) Web slings with aluminum fittings shall not be used where fumes, vapors, sprays, mists or liquids of caustics are present.

(7) Safe operating temperatures. Synthetic web slings of polyester and nylon shall not be used at temperatures in excess of 180°F. Polypropylene web slings shall not be used at temperatures in excess of 200°F.

(8) Repairs.

(a) Synthetic web slings which are repaired shall not be used unless repaired by a sling manufacturer or an equivalent entity.

(b) Each repaired sling shall be proof tested by the manufacturer or equivalent entity to twice the rated capacity prior to its return to service. The employer shall retain a certificate of the proof test and make it available for examination.

(c) Slings, including webbing and fittings, which have been repaired in a temporary manner shall not be used.

(9) Removal from service. Synthetic web slings shall be immediately removed from service if any of the following conditions are present:

(a) Acid or caustic burns;

(b) Melting or charring of any part of the sling surface;

(c) Snags, punctures, tears or cuts;

(d) Broken or worn stitches; or

(e) Distortion of fittings.

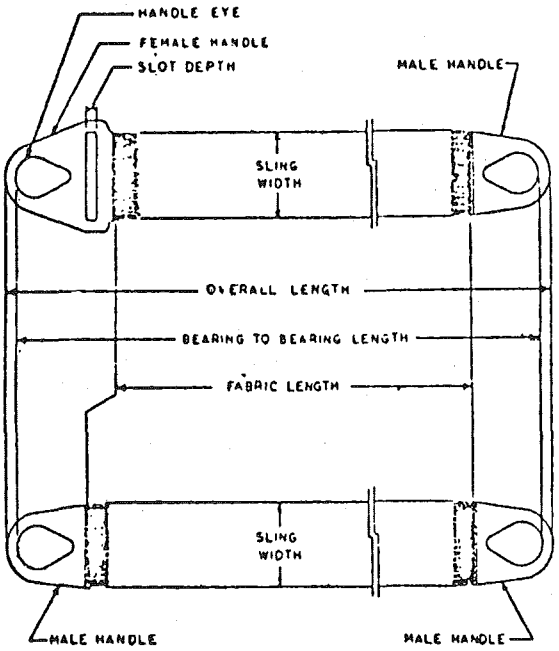


Figure D–1

Metal Mesh Sling (Typical)

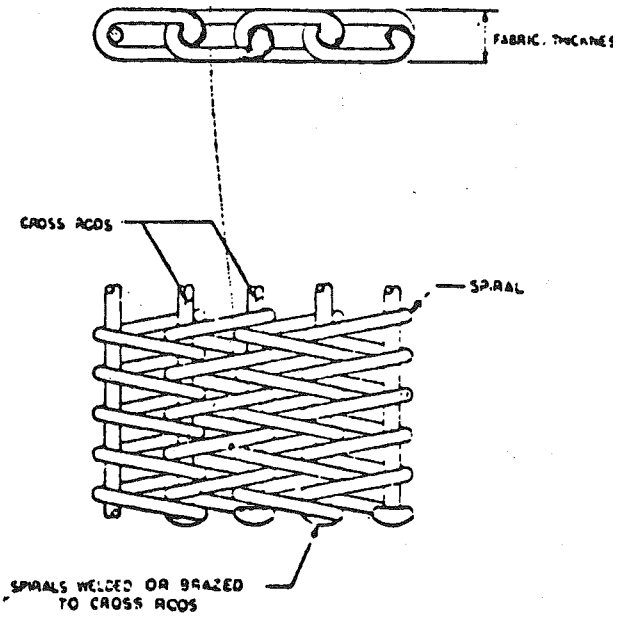


Figure D–2

Metal Mesh Construction

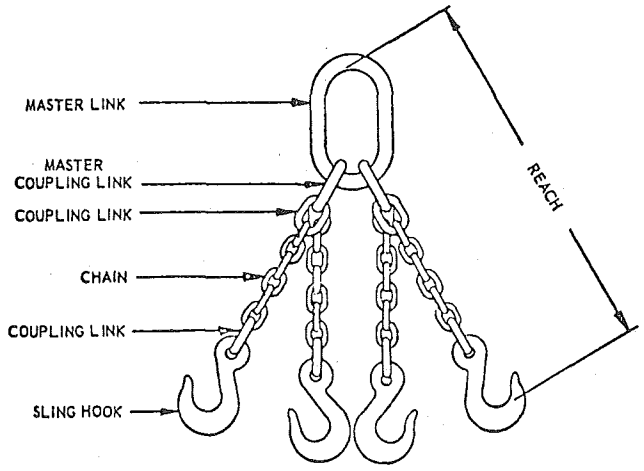


Figure D-3

Major Components of a Quadruple Sling

TABLE D-1

RATED CAPACITY (WORKING LOAD LIMIT), FOR ALLOY STEEL CHAIN SLINGS* RATED CAPACITY (WORKING LOAD LIMIT), POUNDS

TABLE D-1: Part 1--Double Slings

Chain Size, Inches	Single Branch Sling - 90 degree Loading	Double Sling Vertical Angle[1] 30 degree / Horizontal Angle[2] 60 degree	45 degree / 45 degree	60 degree / 30 degree
1/4	3,250	5,650	4,550	3,250
3/8	6,600	11,400	9,300	6,600
1/2	11,250	19,500	15,900	11,250
5/8	16,500	28,500	23,300	16,500
3/4	23,000	39,800	32,500	23,000
7/8	28,750	49,800	40,600	28,750
1	38,750	67,100	54,800	38,750
1-1/8	44,500	77,000	63,000	44,500
1-1/4	57,500	99,500	81,000	57,500
1-3/8	67,000	116,000	94,000	67,000
1-1/2	80,000	138,000	112,500	80,000
1-3/4	100,000	172,000	140,000	100,000

[1]Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical as shown in Figure D-5.

[2]Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load, as shown in Figure D-5.

[3]Quadruple sling rating is same as triple sling because normal lifting practice may not distribute load uniformly to all 4 legs.

TABLE D-1: Part 2--Triple and Quadruple Slings

Chain Size, Inches	Single Branch Sling - 90 degree Loading	Triple and Quadruple Sling[3] Vertical Angle[1] 30 degree / Horizontal Angle[2] 60 degree	45 degree / 45 degree	60 degree / 30 degree
1/4	3,250	8,400	6,800	4,900
3/8	6,600	17,000	14,000	9,900
1/2	11,250	29,000	24,000	17,000
5/8	16,500	43,000	35,000	24,500
3/4	23,000	59,500	48,500	34,500
7/8	28,750	74,500	61,000	43,000
1	38,750	101,000	82,000	58,000
1-1/8	44,500	115,500	94,500	66,500
1-1/4	57,500	149,000	121,500	86,000
1-3/8	67,000	174,000	141,000	100,500
1-1/2	80,000	207,000	169,000	119,500
1-3/4	100,000	258,000	210,000	150,000

[1]Rating of multileg slings adjusted for angle of loading measured as the included angle between the inclined leg and the vertical as shown in Figure D-5.

[2]Rating of multileg slings adjusted for angle of loading between the inclined leg and the horizontal plane of the load, as shown in Figure D-5.

[3]Quadruple sling rating is same as triple sling because normal lifting practice may not distribute load uniformly to all 4 legs.

TABLE D-2

MINIMUM ALLOWABLE CHAIN SIZE AT ANY POINT OF LINK

Chain Size, Inches	Minimum Allowable Chain Size, Inches
1/4	13/64
3/8	19/64
1/2	25/64
5/8	31/64
3/4	19/32
7/8	45/64
1	13/16
1-1/8	29/32
1-1/4	1
1-3/8	1- 3/32
1-1/2	1- 3/16
1-3/4	1-13/32

TABLE D-3

RATED CAPACITIES FOR SINGLE LEG SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH FIBER CORE (FC)

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical HT	MS	S	Choker HT	MS	S	Vertical Basket* HT	MS	S
1/4	6x19	0.49	0.51	0.55	0.37	0.38	0.41	0.99	1.0	1.1
5/16	6x19	0.76	0.79	0.85	0.57	0.59	0.64	1.5	1.6	1.7

TABLE D-3—cont.

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical HT	Vertical MS	Vertical S	Choker HT	Choker MS	Choker S	Vertical Basket* HT	Vertical Basket* MS	Vertical Basket* S
3/8	6x19	1.1	1.1	1.2	0.80	0.85	0.91	2.1	2.2	2.4
7/16	6x19	1.4	1.5	1.6	1.1	1.1	1.2	2.9	3.0	3.3
1/2	6x19	1.8	2.0	2.1	1.4	1.5	1.6	3.7	3.9	4.3
9/16	6x19	2.3	2.5	2.7	1.7	1.9	2.0	4.6	5.0	5.4
5/8	6x19	2.8	3.1	3.3	2.1	2.3	2.5	5.6	6.2	6.7
3/4	6x19	3.9	4.4	4.8	2.9	3.3	3.6	7.8	8.8	9.5
7/8	6x19	5.1	5.9	6.4	3.9	4.5	4.8	10.0	12.0	13.0
1	6x19	6.7	7.7	8.4	5.0	5.8	6.3	13.0	15.0	17.0
1-1/8	6x19	8.4	9.5	10.0	6.3	7.1	7.9	17.0	19.0	21.0
1-1/4	6x37	9.8	11.0	12.0	7.4	8.3	9.2	20.0	22.0	25.0
1-3/8	6x37	12.0	13.0	15.0	8.9	10.0	11.0	24.0	27.0	30.0
1-1/2	6x37	14.0	16.0	17.0	10.0	12.0	13.0	28.0	32.0	35.0
1-5/8	6x37	16.0	18.0	21.0	12.0	14.0	15.0	33.0	37.0	41.0
1-3/4	6x37	19.0	21.0	24.0	14.0	16.0	18.0	38.0	43.0	48.0
2	6x37	25.0	28.0	31.0	18.0	21.0	23.0	49.0	55.0	62.0

HT = Hand tucked splice and hidden tuck splice
For hidden tuck splice (IWRC) use value in HT columns.
MS = Mechanical splice.
S = Swaged or zinc poured socket.
* These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-4

RATED CAPACITIES FOR SINGLE LEG SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH INDEPENDENT WIRE ROPE CORE (IWRC)

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical HT	Vertical MS	Vertical S	Choker HT	Choker MS	Choker S	Vertical Basket* HT	Vertical Basket* MS	Vertical Basket* S
1/4	6x19	0.53	0.56	0.59	0.40	0.42	0.44	1.0	1.1	1.2
5/16	6x19	0.81	0.87	0.92	0.61	0.65	0.69	1.6	1.7	1.8
3/8	6x19	1.1	1.2	1.3	0.86	0.93	0.98	2.3	2.5	2.6
7/16	6x19	1.5	1.7	1.8	1.2	1.3	1.3	3.1	3.4	3.5
1/2	6x19	2.0	2.2	2.3	1.5	1.6	1.7	3.9	4.4	4.6
9/16	6x19	2.5	2.7	2.9	1.8	2x1	2.2	4.9	5.5	5.8
5/8	6x19	3.0	3.4	3.6	2.2	2.5	2.7	6.0	6.8	7.2
3/4	6x19	4.2	4.9	5.1	3.1	3.6	3.8	8.4	9.7	10.0
7/8	6x19	5.5	6.6	6.9	4.1	4.9	5.2	11.0	13.0	14.0
1	6x19	7.2	8.5	9.0	5.4	6.4	6.7	14.0	17.0	18.0
1-1/8	6x19	9.0	10.0	11.0	6.8	7.8	8.5	18.0	21.0	23.0
1-1/4	6x37	10.0	12.0	13.0	7.9	9.2	9.9	21.0	24.0	26.0
1-3/8	6x37	13.0	15.0	16.0	9.6	11.0	12.0	25.0	29.0	32.0
1-1/2	6x37	15.0	17.0	19.0	11.0	13.0	14.0	30.0	35.0	38.0
1-5/8	6x37	18.0	20.0	22.0	13.0	15.0	17.0	35.0	41.0	44.0
1-3/4	6x37	20.0	24.0	26.0	15.0	18.0	19.0	41.0	47.0	51.0
2	6x37	26.0	30.0	33.0	20.0	23.0	25.0	53.0	61.0	66.0

HT = Hand tucked splice.
For hidden tuck splice (IWRC) use Table 1 values in HT column.
MS = Mechanical splice.
S = Swaged or zinc poured socket.
* These values only apply when the D/d ratio for HT slings is 10 or greater, and for MS and S slings is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-5

RATED CAPACITIES FOR SINGLE LEG SLINGS CABLE LAID ROPE – MECHANICAL SPLICE ONLY 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical	Choker	Vertical Basket*
1/4	7x7x7	0.50	0.38	1.0
3/8	7x7x7	1.1	0.81	2.0
1/2	7x7x7	1.8	1.4	3.7
5/8	7x7x7	2.8	2.1	5.5
3/4	7x7x7	3.8	2.9	7.6
5/8	7x7x19	2.9	2.2	5.8
3/4	7x7x19	4.1	3.0	8.1
7/8	7x7x19	5.4	4.0	11.0
1	7x7x19	6.9	5.1	14.0
1-1/8	7x7x19	8.2	6.2	16.0
1-1/4	7x7x19	9.9	7.4	20.0
3/4	7x6x19 IWRC	3.8	2.8	7.6
7/8	7x6x19 IWRC	5.0	3.8	10.0
1	7x6x19 IWRC	6.4	4.8	13.0
1-1/8	7x6x19 IWRC	7.7	5.8	15.0
1-1/4	7x6x19 IWRC	9.2	6.9	18.0
1-5/16	7x6x19 IWRC	10.0	7.5	20.0
1-3/8	7x6x19 IWRC	11.0	8.2	22.0
1-1/2	7x6x19 IWRC	13.0	9.6	26.0

* These values only apply when the D/d ratio is 10 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of rope.

TABLE D-6

RATED CAPACITIES FOR SINGLE LEG SLINGS 8-PART AND 6-PART BRAIDED ROPE 6x7 AND 6x19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE 7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

Component Ropes Diameter (inches)	Constr.	Rated Capacities, Tons (2,000 lb) Vertical 8-Part	Vertical 6-Part	Choker 8-Part	Choker 6-Part	Basket Vertical to 30 degrees* 8-Part	Basket Vertical to 30 degrees* 6-Part
3/32	6x7	0.42	0.32	0.32	0.24	0.74	0.55
1/8	6x7	0.76	0.57	0.57	0.42	1.3	0.98
3/16	6x7	1.7	1.3	1.3	0.94	2.9	2.2
3/32	7x7	0.51	0.39	0.38	0.29	0.89	0.67
1/8	7x7	0.95	0.71	0.71	0.53	1.6	1.2
3/16	7x7	2.1	1.5	1.5	1.2	3.6	2.7
3/16	6x19	1.7	1.3	1.3	0.98	3.0	2.2
1/4	6x19	3.1	2.3	2.3	1.7	5.3	4.0
5/16	6x19	4.8	3.6	3.6	2.7	8.3	6.2
3/8	6x19	6.8	5.1	5.1	3.8	12.0	8.9
7/16	6x19	9.3	6.9	6.9	5.2	16.0	12.0
1/2	6x19	12.0	9.0	9.0	6.7	21.0	15.0
9/16	6x19	15.0	11.0	11.0	8.5	26.0	20.0
5/8	6x19	19.0	14.0	14.0	10.0	32.0	24.0

TABLE D-6--cont.

Component Ropes		Rated Capacities, Tons (2,000 lb)					
Diameter		Vertical		Choker		Basket Vertical to 30 degrees*	
(inches)	Constr.	8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/4	6x19	27.0	20.0	20.0	15.0	46.0	35.0
7/8	6x19	36.0	27.0	27.0	20.0	62.0	47.0
1	6x19	47.0	35.0	35.0	26.0	81.0	61.0

* These values only apply when the D/d ratio is 20 or greater where:
D = Diameter of curvature around which the body of the sling is bent.
d = Diameter of component rope.

TABLE D-7

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH FIBER CORE (FC)

TABLE D-7: Part 1--2-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	0.85	0.88	0.70	0.72	0.49	0.51
5/16	6x19	1.3	1.4	1.1	1.1	0.76	0.79
3/8	6x19	1.8	1.9	1.5	1.6	1.1	1.1
7/16	6x19	2.5	2.6	2.0	2.2	1.4	1.5
1/2	6x19	3.2	3.4	2.6	2.8	1.8	2.0
9/16	6x19	4.0	4.3	3.2	3.5	2.3	2.5
5/8	6x19	4.8	5.3	4.0	4.4	2.8	3.1
3/4	6x19	6.8	7.6	5.5	6.2	3.9	4.4
7/8	6x19	8.9	10.0	7.3	8.4	5.1	5.9
1	6x19	11.0	13.0	9.4	11.0	6.7	7.7
1-1/8	6x19	14.0	16.0	12.0	13.0	8.4	9.5
1-1/4	6x37	17.0	19.0	14.0	16.0	9.8	11.0
1-3/8	6x37	20.0	23.0	17.0	19.0	12.0	13.0
1-1/2	6x37	24.0	27.0	20.0	22.0	14.0	16.0
1-5/8	6x37	28.0	32.0	23.0	26.0	16.0	18.0
1-3/4	6x37	33.0	37.0	27.0	30.0	19.0	21.0
2	6x37	43.0	48.0	35.0	39.0	25.0	28.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-7: Part 2--3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Slings					
Dia. (Inches)	Constr.	Ver 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	1.3	1.3	1.0	1.1	0.74	0.76
5/16	6x19	2.0	2.0	1.6	1.7	1.1	1.2

TABLE D-7: Part 2--3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Slings					
Dia. (Inches)	Constr.	Ver 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
3/8	6x19	2.8	2.9	2.3	2.4	1.6	1.7
7/16	6x19	3.7	4.0	3.0	3.2	2.1	2.3
1/2	6x19	4.8	5.1	3.9	4.2	2.8	3.0
9/16	6x19	6.0	6.5	4.9	5.3	3.4	3.7
5/8	6x19	7.3	8.0	5.9	6.5	4.2	4.6
3/4	6x19	10.0	11.0	8.3	9.3	5.8	6.6
7/8	6x19	13.0	15.0	11.0	13.0	7.7	8.9
1	6x19	17.0	20.0	14.0	16.0	10.0	11.0
1-1/8	6x19	22.0	24.0	18.0	20.0	13.0	14.0
1-1/4	6x37	25.0	29.0	21.0	23.0	15.0	17.0
1-3/8	6x37	31.0	35.0	25.0	28.0	18.0	20.0
1-1/2	6x37	36.0	41.0	30.0	33.0	21.0	24.0
1-5/8	6x37	43.0	48.0	35.0	39.0	25.0	28.0
1-3/4	6x37	49.0	56.0	40.0	45.0	28.0	32.0
2	6x37	64.0	72.0	52.0	59.0	37.0	41.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-8

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 6x19 AND 6x37 CLASSIFICATION IMPROVED PLOW STEEL GRADE ROPE WITH INDEPENDENT WIRE ROPE CORE (IWRC)

TABLE D-8: Part 1--2-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	0.92	0.97	0.75	0.79	0.53	0.56
5/16	6x19	1.4	1.5	1.1	1.2	0.81	0.87
3/8	6x19	2.0	2.1	1.6	1.8	1.1	1.2
7/16	6x19	2.7	2.9	2.2	2.4	1.5	1.7
1/2	6x19	3.4	3.8	2.8	3.1	2.0	2.2
9/16	6x19	4.3	4.8	3.5	3.9	2.5	2.7
5/8	6x19	5.2	5.9	4.2	4.8	3.0	3.4
3/4	6x19	7.3	8.4	5.9	6.9	4.2	4.9
7/8	6x19	9.6	11.0	7.8	9.3	5.5	6.6
1	6x19	12.0	15.0	10.0	12.0	7.2	8.5
1-1/8	6x19	16.0	18.0	13.0	15.0	9.0	10.0
1-1/4	6x37	18.0	21.0	15.0	17.0	10.0	12.0
1-3/8	6x37	22.0	25.0	18.0	21.0	13.0	15.0
1-1/2	6x37	26.0	30.0	21.0	25.0	15.0	17.0
1-5/8	6x37	31.0	35.0	25.0	29.0	18.0	20.0
1-3/4	6x37	35.0	41.0	29.0	33.0	20.0	24.0
2	6x37	46.0	53.0	37.0	43.0	26.0	30.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-8: Part 2--3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Sling					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		HT	MS	HT	MS	HT	MS
1/4	6x19	1.4	1.4	1.1	1.2	0.79	0.84
5/16	6x19	2.1	2.3	1.7	1.8	1.2	1.3
3/8	6x19	3.0	3.2	2.4	2.6	1.7	1.9
7/16	6x19	4.0	4.4	3.3	3.6	2.3	2.5
1/2	6x19	5.1	5.7	4.2	4.6	3.0	3.3
9/16	6x19	6.4	7.1	5.2	5.8	3.7	4.1
5/8	6x19	7.8	8.8	6.4	7.2	4.5	5.1
3/4	6x19	11.0	13.0	8.9	10.0	6.3	7.3
7/8	6x19	14.0	17.0	12.0	14.0	8.3	9.9
1	6x19	19.0	22.0	15.0	18.0	11.0	13.0
1-1/8	6x19	23.0	27.0	19.0	22.0	13.0	16.0
1-1/4	6x37	27.0	32.0	22.0	26.0	16.0	18.0
1-3/8	6x37	33.0	38.0	27.0	31.0	19.0	22.0
1-1/2	6x37	39.0	45.0	32.0	37.0	23.0	26.0
1-5/8	6x37	46.0	53.0	38.0	43.0	27.0	31.0
1-3/4	6x37	53.0	61.0	43.0	50.0	31.0	35.0
2	6x37	68.0	79.0	56.0	65.0	40.0	46.0

HT = Hand tucked splice.
MS = Mechanical splice.

TABLE D-9: Part 2--3-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Sling		
Dia. (Inches)	Constr.	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg
1/4	7x7x7	1.3	1.1	0.75
3/8	7x7x7	2.8	2.3	1.6
1/2	7x7x7	4.8	3.9	2.8
5/8	7x7x7	7.2	5.9	4.2
3/4	7x7x7	9.9	8.1	5.7
5/8	7x7x19	7.5	6.1	4.3
3/4	7x7x19	10.0	8.6	6.1
7/8	7x7x19	14.0	11.0	8.1
1	7x7x19	18.0	14.0	10.0
1-1/8	7x7x19	21.0	17.0	12.0
1-1/4	7x7x19	26.0	21.0	15.0
3/4	7x6x19 IWRC	9.9	8.0	5.7
7/8	7x6x19 IWRC	13.0	11.0	7.5
1	7x6x19 IWRC	17.0	13.0	9.6
1-1/8	7x6x19 IWRC	20.0	16.0	11.0
1-1/4	7x6x19 IWRC	24.0	20.0	14.0
1-5/16	7x6x19 IWRC	26.0	21.0	15.0
1-3/8	7x6x19 IWRC	28.0	23.0	16.0
1-1/2	7x6x19 IWRC	33.0	27.0	19.0

TABLE D-9

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS CABLE LAID ROPE - MECHANICAL SPLICE ONLY 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

TABLE D-9: Part 1--2-Leg Bridle Slings

Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Sling		
Dia. (Inches)	Constr.	Vert 30 deg Horz 60 deg	45 degree Angle	Vert 60 deg Horz 30 deg
1/4	7x7x7	0.87	0.71	0.50
3/8	7x7x7	1.9	1.5	1.1
1/2	7x7x7	3.2	2.6	1.8
5/8	7x7x7	4.8	3.9	2.8
3/4	7x7x7	6.6	5.4	3.8
5/8	7x7x19	5.0	4.1	2.9
3/4	7x7x19	7.0	5.7	4.1
7/8	7x7x19	9.3	7.6	5.4
1	7x7x19	12.0	9.7	6.9
1-1/8	7x7x19	14.0	12.0	8.2
1-1/4	7x7x19	17.0	14.0	9.9
3/4	7x6x19 IWRC	6.6	5.4	3.8
7/8	7x6x19 IWRC	8.7	7.1	5.0
1	7x6x19 IWRC	11.0	9.0	6.4
1-1/8	7x6x19 IWRC	13.0	11.0	7.7
1-1/4	7x6x19 IWRC	16.0	13.0	9.2
1-5/16	7x6x19 IWRC	17.0	14.0	10.0
1-3/8	7x6x19 IWRC	19.0	15.0	11.0
1-1/2	7x6x19 IWRC	22.0	18.0	13.0

TABLE D-10

RATED CAPACITIES FOR 2-LEG AND 3-LEG BRIDLE SLINGS 8-PART AND 6-PART BRAIDED ROPE 6x7 AND 6x19 CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE 7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

TABLE D-10: Part 1--2-Leg Bridle Slings

Component Rope		Rated Capacities, Tons (2,000 lb) 2-Leg Bridle Slings					
Dia. (Inches)	Constr.	Vert 30 degree Horz 60 degree		45 degree Angle		Vert 60 degree Horz 30 degree	
		8-Part	6-Part	8-Part	6-Part	8-Part	6-Part
3/32	6x7	0.74	0.55	0.60	0.45	0.42	0.32
1/8	6x7	1.3	0.98	1.1	0.80	0.76	0.57
3/16	6x7	2.9	2.2	2.4	1.8	1.7	1.3
3/32	7x7	0.89	0.67	0.72	0.55	0.51	0.39
1/8	7x7	1.6	1.2	1.3	1.0	0.95	0.71
3/16	7x7	3.6	2.7	2.9	2.2	2.1	1.5
3/16	6x19	3.0	2.2	2.4	1.8	1.7	1.3
1/4	6x19	5.3	4.0	4.3	3.2	3.1	2.3
5/16	6x19	8.3	6.2	6.7	5.0	4.8	3.6
3/8	6x19	12.0	8.9	9.7	7.2	6.8	5.1
7/16	6x19	16.0	12.0	13.0	9.8	9.3	6.9
1/2	6x19	21.0	15.0	17.0	13.0	12.0	9.0
9/16	6x19	26.0	20.0	21.0	16.0	15.0	11.0
5/8	6x19	32.0	24.0	26.0	20.0	19.0	14.0
3/4	6x19	46.0	35.0	38.0	28.0	27.0	20.0
7/8	6x19	62.0	47.0	51.0	38.0	36.0	27.0
1	6x19	81.0	61.0	66.0	50.0	47.0	35.0

TABLE D-10: Part 2--3-Leg Bridle Slings

Component Rope Dia. (Inches)	Constr.	Rated Capacities, Tons (2,000 lb) 3-Leg Bridle Slings Vert 30 degree Horz 60 degree 8-Part	6-Part	45 degree Angle 8-Part	6-Part	Vert 60 degree Horz 30 degree 8-Part	6-Part
3/32	6x7	1.1	0.83	0.90	0.68	0.64	0.48
1/8	6x7	2.0	1.5	1.6	1.2	1.1	0.85
3/16	6x7	4.4	3.3	3.6	2.7	2.5	1.9
3/32	7x7	1.3	1.0	1.1	0.82	0.77	0.58
1/8	7x7	2.5	1.8	2.0	1.5	1.4	1.1
3/16	7x7	5.4	4.0	4.4	3.3	3.1	2.3
3/16	6x19	4.5	3.4	3.7	2.8	2.6	1.9
1/4	6x19	8.0	6.0	6.5	4.9	4.6	3.4
5/16	6x19	12.0	9.3	10.0	7.6	7.1	5.4
3/8	6x19	18.0	13.0	14.0	11.0	10.0	7.7
7/16	6x19	24.0	18.0	20.0	15.0	14.0	10.0
1/2	6x19	31.0	23.0	25.0	19.0	18.0	13.0
9/16	6x19	39.0	29.0	32.0	24.0	23.0	17.0
5/8	6x19	48.0	36.0	40.0	30.0	28.0	21.0
3/4	6x19	69.0	52.0	56.0	42.0	40.0	30.0
7/8	6x19	94.0	70.0	76.0	57.0	54.0	40.0
1	6x19	122.0	91.0	99.0	74.0	70.0	53.0

TABLE D-11

RATED CAPACITIES FOR STRAND LAID GROMMET - HAND TUCKED IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY Dia. (Inches)	Constr.	RATED CAPACITIES, TONS (2,000 lb) Vertical	Choker	Vertical Basket*
1/4	7x19	0.85	0.64	1.7
5/16	7x19	1.3	1.0	2.6
3/8	7x19	1.9	1.4	3.8
7/16	7x19	2.6	1.9	5.2
1/2	7x19	3.3	2.5	6.7
9/16	7x19	4.2	3.1	8.4
5/8	7x19	5.2	3.9	10.00
3/4	7x19	7.4	5.6	15.0
7/8	7x19	10.0	7.5	20.0
1	7x19	13.0	9.7	26.0
1-1/8	7x19	16.0	12.0	32.0

TABLE D-11--cont.

ROPE BODY Dia. (Inches)	Constr.	RATED CAPACITIES, TONS (2,000 lb) Vertical	Choker	Vertical Basket*
1-1/4	7x37	18.0	14.0	37.0
1-3/8	7x37	22.0	16.0	44.0
1-1/2	7x37	26.0	19.0	52.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

TABLE D-12

RATED CAPACITIES FOR CABLE LAID GROMMET - HAND TUCKED 7x6x7 AND 7x6x19 CONSTRUCTIONS IMPROVED PLOW STEEL GRADE ROPE 7x7x7 CONSTRUCTION GALVANIZED AIRCRAFT GRADE ROPE

CABLE BODY Dia. (Inches)	Constr.	RATED CAPACITIES, TONS (2,000 lb) Vertical	Choker	Vertical Basket*
3/8	7x6x7	1.3	0.95	2.5
9/16	7x6x7	2.8	2.1	5.6
5/8	7x6x7	3.8	2.8	7.6
3/8	7x7x7	1.6	1.2	3.2
9/16	7x7x7	3.5	2.6	6.9
5/8	7x7x7	4.5	3.4	9.0
5/8	7x6x19	3.9	3.0	7.9
3/4	7x6x19	5.1	3.8	10.0
15/16	7x6x19	7.9	5.9	16.0
1-1/8	7x6x19	11.0	8.4	22.0
1-5/16	7x6x19	15.0	11.0	30.0
1-1/2	7x6x19	19.0	14.0	39.0
1-11/16	7x6x19	24.0	18.0	49.0
1-7/8	7x6x19	30.0	22.0	60.0
2-1/4	7x6x19	42.0	31.0	84.0

TABLE D-12--cont.

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
2-5/8	7x6x19	56.0	42.0	112.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

TABLE D-13

RATED CAPACITIES FOR STRAND LAID ENDLESS SLINGS - MECHANICAL JOINT IMPROVED PLOW STEEL GRADE ROPE

ROPE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	6x19 IWRC	0.92	0.69	1.8
3/8	6x19 IWRC	2.0	1.5	4.1
1/2	6x19 IWRC	3.6	2.7	7.2
5/8	6x19 IWRC	5.6	4.2	11.0
3/4	6x19 IWRC	8.0	6.0	16.0
7/8	6x19 IWRC	11.0	8.1	21.0
1	6x19 IWRC	14.0	10.0	28.0
1-1/8	6x19 IWRC	18.0	13.0	35.0
1-1/4	6x37 IWRC	21.0	15.0	41.0
1-3/8	6x37 IWRC	25.0	19.0	50.0
1-1/2	6x37 IWRC	29.0	22.0	59.0

* These values only apply when the D/d ratio is 5 or greater where:
D = Diameter of curvature around which rope is bent.
d = Diameter of rope body.

TABLE D-14

RATED CAPACITIES FOR CABLE LAID ENDLESS SLINGS - MECHANICAL JOINT 7x7x7 AND 7x7x19 CONSTRUCTIONS GALVANIZED AIRCRAFT GRADE ROPE 7x6x19 IWRC CONSTRUCTION IMPROVED PLOW STEEL GRADE ROPE

CABLE BODY		RATED CAPACITIES, TONS (2,000 lb)		
				
Dia. (Inches)	Constr.	Vertical	Choker	Vertical Basket*
1/4	7x7x7	0.83	0.62	1.6
3/8	7x7x7	1.8	1.3	3.5
1/2	7x7x7	3.0	2.3	6.1
5/8	7x7x7	4.5	3.4	9.1
3/4	7x7x7	6.3	4.7	12.0
5/8	7x7x19	4.7	3.5	9.5
3/4	7x7x19	6.7	5.0	13.0
7/8	7x7x19	8.9	6.6	18.0
1	7x7x19	11.0	8.5	22.0
1-1/8	7x7x19	14.0	10.0	28.0
1-1/4	7x7x19	17.0	12.0	33.0
3/4	7x6x19 IWRC	6.2	4.7	12.0
7/8	7x6x19 IWRC	8.3	6.2	16.0
1	7x6x19 IWRC	10.0	7.9	21.0
1-1/8	7x6x19 IWRC	13.0	9.7	26.0
1-1/4	7x6x19 IWRC	16.0	12.0	31.0
1-3/8	7x6x19 IWRC	18.0	14.0	37.0
1-1/2	7x6x19 IWRC	22.0	16.0	43.0

* These values only apply when the D/d value is 5 or greater where:
D = Diameter of curvature around which cable body is bent.
d = Diameter of cable body.

TABLE D-15

RATED CAPACITIES
CARBON STEEL AND STAINLESS STEEL
METAL MESH SLINGS

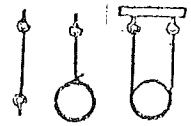
SLING WIDTH IN INCHES	EFFECT OF ANGLE ON RATED CAPACITIES IN BASKET HITCH				
	 VERTICAL OR CHOKER	VERTICAL BASKET	 30 deg Vertical 60 deg Horizontal	 45 deg Vertical 45 deg Horizontal	 60 deg Vertical 30 deg Horizontal
Heavy Duty–10 Ga 35 Spirals/Ft of sling width					
2	1,500	3,000	2,600	2,100	1,500
3	2,700	5,400	4,700	3,800	2,700
4	4,000	8,000	6,900	5,600	4,000
6	6,000	12,000	10,400	8,400	6,000
8	8,000	16,000	13,800	11,300	8,000
10	10,000	20,000	17,000	14,100	10,000
12	12,000	24,000	20,700	16,900	12,000
14	14,000	28,000	24,200	19,700	14,000
16	16,000	32,000	27,700	22,600	16,000
18	18,000	36,000	31,100	25,400	18,000
20	20,000	40,000	34,600	28,200	20,000
Medium Duty–12 Ga 43 Spirals/Ft of sling width					
2	1,350	2,700	2,300	1,900	1,400
3	2,000	4,000	3,500	2,800	2,000
4	2,700	5,400	4,700	3,800	2,700
6	4,500	9,000	7,800	6,400	4,500
8	6,000	12,000	10,400	8,500	6,000
10	7,500	15,000	13,000	10,600	7,500
12	9,000	18,000	15,600	12,700	9,000
14	10,500	21,000	18,200	14,800	10,500
16	12,000	24,000	20,800	17,000	12,000
18	13,500	27,000	23,400	19,100	13,500
20	15,000	30,000	26,000	21,200	15,000
Light Duty–14 Ga 59 Spirals/Ft of sling width					
2	900	1,800	1,600	1,300	900
3	1,400	2,800	2,400	2,000	1,400
4	2,000	4,000	3,500	2,800	2,000
6	3,000	6,000	5,200	4,200	3,000
8	4,000	8,000	6,900	5,700	4,000
10	5,000	10,000	8,600	7,100	5,000
12	6,000	12,000	10,400	8,500	6,000
14	7,000	14,000	12,100	9,900	7,000
16	8,000	16,000	13,900	11,300	8,000
18	9,000	18,000	15,600	12,700	9,000
20	10,000	20,000	17,300	14,100	10,000

TABLE D-16

MANILA ROPE SLINGS

TABLE D-16: Part 1--Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
				Angle of Rope to Vertical			
		Vertical Hitch	Choker Hitch	0°	30°	45°	60°
1/2	7.5	480	240	960	830	680	480
9/16	10.4	620	310	1,240	1,070	875	620
5/8	13.3	790	395	1,580	1,370	1,120	790
3/4	16.7	970	485	1,940	1,680	1,370	970
13/16	19.5	1,170	585	2,340	2,030	1,650	1,170
7/8	22.5	1,390	695	2,780	2,410	1,970	1,390
1"	27.0	1,620	810	3,240	2,810	2,290	1,620
1 1/16	31.3	1,890	945	3,780	3,270	2,670	1,890
1 1/8	36.0	2,160	1,080	4,320	3,740	3,050	2,160
1 1/4	41.7	2,430	1,220	4,860	4,210	3,440	2,430
1 5/16	47.9	2,700	1,350	5,400	4,680	3,820	2,700
1 1/2	59.9	3,330	1,670	6,660	5,770	4,710	3,330
1 5/8	74.6	4,050	2,030	8,100	7,010	5,730	4,050
1 3/4	89.3	4,770	2,390	9,540	8,260	6,740	4,770
2"	107.5	5,580	2,790	11,200	9,660	7,890	5,580
2 1/8	125.0	6,480	3,240	13,000	11,200	9,160	6,480
2 1/4	146.0	7,380	3,690	14,800	12,800	10,400	7,380
2 1/2	166.7	8,370	4,190	16,700	14,500	11,800	8,370
2 5/8	190.8	9,360	4,680	18,700	16,200	13,200	9,360

See Figures D-4 and D-5 for sling configuration description.

TABLE D-16: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
				Angle of Rope to Vertical			
		Vertical Hitch	Choker Hitch	0°	30°	45°	60°
1/2	7.5	865	430	1,730	1,500	1,220	865
9/16	10.4	1,120	560	2,230	1,930	1,580	1,120
5/8	13.3	1,420	710	2,840	2,460	2,010	1,420
3/4	16.7	1,750	875	3,490	3,020	2,470	1,750
13/16	19.5	2,110	1,050	4,210	3,650	2,980	2,110
7/8	22.5	2,500	1,250	5,000	4,330	3,540	2,500
1"	27.0	2,920	1,460	5,830	5,050	4,120	2,920
1 1/16	31.3	3,400	1,700	6,800	5,890	4,810	3,400
1 1/8	36.0	3,890	1,940	7,780	6,730	5,500	3,890
1 1/4	41.7	4,370	2,190	8,750	7,580	6,190	4,370
1 5/16	47.9	4,860	2,430	9,720	8,420	6,870	4,860
1 1/2	59.9	5,990	3,000	12,000	10,400	8,480	5,990
1 5/8	74.6	7,290	3,650	14,600	12,600	10,300	7,290
1 3/4	89.3	8,590	4,290	17,200	14,900	12,100	8,590
2"	107.5	10,000	5,020	20,100	17,400	14,200	10,000
2 1/8	125.0	11,700	5,830	23,300	20,200	16,500	11,700

TABLE D-16: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
2 1/4	146.0	13,300	6,640	26,600	23,000	18,800	13,300
2 1/2	166.7	15,100	7,530	30,100	26,100	21,300	15,100
2 5/8	190.8	16,800	8,420	33,700	29,200	23,800	16,800

See Figures D-4 and D-5 for sling configuration description.

TABLE D-17

NYLON ROPE SLINGS

TABLE D-17: Part 1--Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	6.5	635	320	1,270	1,100	900	635
9/16	8.3	790	395	1,580	1,370	1,120	790
5/8	10.5	1,030	515	2,060	1,780	1,460	1,030
3/4	14.5	1,410	705	2,820	2,440	1,990	1,410
13/16	17.0	1,680	840	3,360	2,910	2,380	1,680
7/8	20.0	1,980	990	3,960	3,430	2,800	1,980
1"	26.0	2,480	1,240	4,960	4,300	3,510	2,480
1 1/16	29.0	2,850	1,430	5,700	4,940	4,030	2,850
1 1/8	34.0	3,270	1,640	6,540	5,660	4,620	3,270
1 1/4	40.0	3,710	1,860	7,420	6,430	5,250	3,710
1 5/16	45.0	4,260	2,130	8,520	7,380	6,020	4,260
1 1/2	55.0	5,250	2,630	10,500	9,090	7,420	5,250
1 5/8	68.0	6,440	3,220	12,900	11,200	9,110	6,440
1 3/4	83.0	7,720	3,860	15,400	13,400	10,900	7,720
2"	95.0	9,110	4,560	18,200	15,800	12,900	9,110
2 1/8	109.0	10,500	5,250	21,000	18,200	14,800	10,500
2 1/4	129.0	12,400	6,200	24,800	21,500	17,500	12,400
2 1/2	149.0	13,900	6,950	27,800	24,100	19,700	13,900
2 5/8	168.0	16,000	8,000	32,000	27,700	22,600	16,000

See Figures D-4 and D-5 for sling configuration description.

TABLE D-17: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	6.5	1,140	570	2,290	1,980	1,620	1,140
9/16	8.3	1,420	710	2,840	2,460	2,010	1,420

TABLE D-17: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
5/8	10.5	1,850	925	3,710	3,210	2,620	1,850
3/4	14.5	2,540	1,270	5,080	4,400	3,590	2,540
13/16	17.0	3,020	1,510	6,050	5,240	4,280	3,020
7/8	20.0	3,560	1,780	7,130	6,170	5,040	3,560
1"	26.0	4,460	2,230	8,930	7,730	6,310	4,460
1 1/16	29.0	5,130	2,570	10,300	8,890	7,260	5,130
1 1/8	34.0	5,890	2,940	11,800	10,200	8,330	5,890
1 1/4	40.0	6,680	3,340	13,400	11,600	9,450	6,680
1 5/16	45.0	7,670	3,830	15,300	13,300	10,800	7,670
1 1/2	55.0	9,450	4,730	18,900	16,400	13,400	9,450
1 5/8	68.0	11,600	5,800	23,200	20,100	16,400	11,600
1 3/4	83.0	13,900	6,950	27,800	24,100	19,700	13,900
2"	95.0	16,400	8,200	32,800	28,400	23,200	16,400
2 1/8	109.0	18,900	9,450	37,800	32,700	26,700	18,900
2 1/4	129.0	22,300	11,200	44,600	38,700	31,600	22,300
2 1/2	149.0	25,000	12,500	50,000	43,300	35,400	25,000
2 5/8	168.0	28,800	14,400	57,600	49,900	40,700	28,800

See Figures D-4 and D-5 for sling configuration description.

TABLE D-18

POLYESTER ROPE SLINGS

TABLE D-18: Part 1--Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60	45°	30
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	8.0	635	320	1,270	1,100	900	635
9/16	10.2	790	395	1,580	1,370	1,120	790
5/8	13.0	990	495	1,980	1,710	1,400	990
3/4	17.5	1,240	620	2,480	2,150	1,750	1,240
13/16	21.0	1,540	770	3,080	2,670	2,180	1,540
7/8	25.0	1,780	890	3,560	3,080	2,520	1,780
1"	30.5	2,180	1,090	4,360	3,780	3,080	2,180
1 1/16	34.5	2,530	1,270	5,060	4,380	3,580	2,530
1 1/8	40.0	2,920	1,460	5,840	5,060	4,130	2,920
1 1/4	46.3	3,290	1,650	6,580	5,700	4,650	3,290
1 5/16	52.5	3,710	1,860	7,420	6,430	5,250	3,710
1 1/2	66.8	4,630	2,320	9,260	8,020	6,550	4,630
1 5/8	82.0	5,640	2,820	11,300	9,770	7,980	5,640
1 3/4	98.0	6,710	3,360	13,400	11,600	9,490	6,710
2"	118.0	7,920	3,960	15,800	13,700	11,200	7,920
2 1/8	135.0	9,110	4,460	18,200	15,800	12,900	9,110
2 1/4	157.0	10,600	5,300	21,200	18,400	15,000	10,600
2 1/2	181.0	12,100	6,050	24,200	21,000	17,100	12,100
2 5/8	205.0	13,600	6,800	27,200	23,600	19,200	13,600

See Figures D-4 and D-5 for sling configuration description.

TABLE D-18: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	8.0	1,140	570	2,290	1,980	1,620	1,140
9/16	10.2	1,420	710	2,840	2,460	2,010	1,420
5/8	13.0	1,780	890	3,570	3,090	2,520	1,780
3/4	17.5	2,230	1,120	4,470	3,870	3,160	2,230
13/16	21.0	2,770	1,390	5,540	4,800	3,920	2,770
7/8	25.0	3,200	1,600	6,410	5,550	4,530	3,200
1"	30.5	3,920	1,960	7,850	6,800	5,550	3,920
1 1/16	34.5	4,550	2,280	9,110	7,990	6,440	4,550
1 1/8	40.0	5,260	2,630	10,500	9,100	7,440	5,260
1 1/4	46.3	5,920	2,960	11,800	10,300	8,380	5,920
1 5/16	52.5	6,680	3,340	13,400	11,600	9,450	6,680
1 1/2	66.8	8,330	4,170	16,700	14,400	11,800	8,330
1 5/8	82.0	10,200	5,080	20,300	17,600	14,400	10,200
1 3/4	98.0	12,100	6,040	24,200	20,900	17,100	12,100
2"	118.0	14,300	7,130	28,500	24,700	20,200	14,300
2 1/8	135.0	16,400	8,200	32,800	28,400	23,200	16,400
2 1/4	157.0	19,100	9,540	38,200	33,100	27,000	19,100
2 1/2	181.0	21,800	10,900	43,600	37,700	30,800	21,800
2 5/8	205.0	24,500	12,200	49,000	42,400	34,600	24,500

See Figures D-4 and D-5 for sling configuration description.

TABLE D-19

POLYPROPYLENE ROPE SLINGS

TABLE D-19: Part 1--Eye and Eye Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	4.7	645	325	1,290	1,120	910	645
9/16	6.1	780	390	1,560	1,350	1,100	780
5/8	7.5	950	475	1,900	1,650	1,340	950
3/4	10.7	1,300	650	2,600	2,250	1,840	1,300
13/16	12.7	1,520	760	3,040	2,630	2,150	1,520
7/8	15.0	1,760	880	3,520	3,050	2,490	1,760
1"	18.0	2,140	1,070	4,280	3,700	3,030	2,140
1 1/16	20.4	2,450	1,230	4,900	4,240	3,460	2,450
1 1/8	23.7	2,800	1,400	5,600	4,850	3,960	2,800

TABLE D-19: Part 1--Eye and Eye Sling

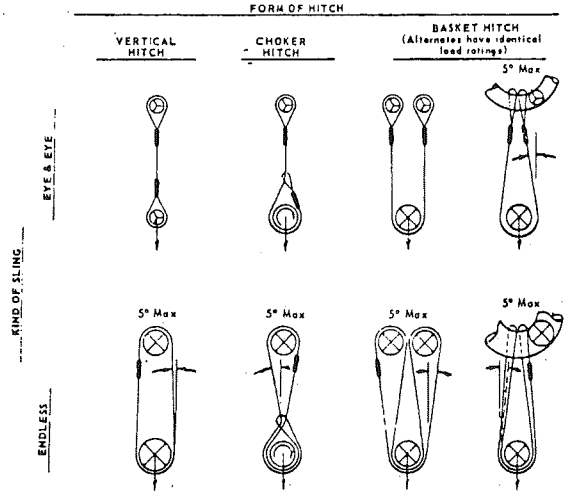
Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	EYE & EYE SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1 1/4	27.0	3,210	1,610	6,420	5,560	4,540	3,210
1 5/16	30.5	3,600	1,800	7,200	6,240	5,090	3,600
1 1/2	38.5	4,540	2,270	9,080	7,860	6,420	4,540
1 5/8	47.5	5,510	2,760	11,000	9,540	7,790	5,510
1 3/4	57.0	6,580	3,290	13,200	11,400	9,300	6,580
2"	69.0	7,960	3,980	15,900	13,800	11,300	7,960
2 1/8	80.0	9,330	4,670	18,700	16,200	13,200	9,330
2 1/4	92.0	10,600	5,300	21,200	18,400	15,000	10,600
2 1/2	107.0	12,200	6,100	24,400	21,100	17,300	12,200
2 5/8	120.0	13,800	6,900	27,600	23,900	19,600	13,800

See Figures D-4 and D-5 for sling configuration description.

TABLE D-19: Part 2--Endless Sling

Rope Diameter Nominal in Inches	Nominal Weight per 100 ft. in Pounds	ENDLESS SLING					
				BASKET HITCH			
				Angle of Rope to Horizontal			
				90°	60°	45°	30°
		Vertical Hitch	Choker Hitch	Angle of Rope to Vertical 0°	30°	45°	60°
1/2	4.7	1,160	580	2,320	2,010	1,640	1,160
9/16	6.1	1,400	700	2,810	2,430	1,990	1,400
5/8	7.5	1,710	855	3,420	2,960	2,420	1,710
3/4	10.7	2,340	1,170	4,680	4,050	3,310	2,340
13/16	12.7	2,740	1,370	5,470	4,740	3,870	2,740
7/8	15.0	3,170	1,580	6,340	5,490	4,480	3,170
1"	18.0	3,850	1,930	7,700	6,670	5,450	3,860
1 1/16	20.4	4,410	2,210	8,820	7,640	6,240	4,410
1 1/8	23.7	5,040	2,520	10,100	8,730	7,130	5,040
1 1/4	27.0	5,780	2,890	11,600	10,000	8,170	5,780
1 5/16	30.5	6,480	3,240	13,000	11,200	9,170	6,480
1 1/2	38.5	8,170	4,090	16,300	14,200	11,600	8,170
1 5/8	47.5	9,920	4,960	19,800	17,200	14,000	9,920
1 3/4	57.0	11,800	5,920	23,700	20,500	16,800	11,800
2"	69.0	14,300	7,160	28,700	24,800	20,300	14,300
2 1/8	80.0	16,800	8,400	33,600	29,100	23,800	16,800
2 1/4	92.0	19,100	9,540	38,200	33,100	27,000	19,100
2 1/2	107.0	22,000	11,000	43,900	38,000	31,100	22,000
2 5/8	120.0	24,800	12,400	49,700	43,000	35,100	24,800

See Figures D-4 and D-5 for sling configuration description.



Notes: Angles of 5° or less from the vertical may be considered vertical angles.

For slings with legs more than 5° off vertical, the actual angle as shown in Figure D–5 must be considered.

EXPLANATION OF SYMBOLS: Minimum diameter of curvature

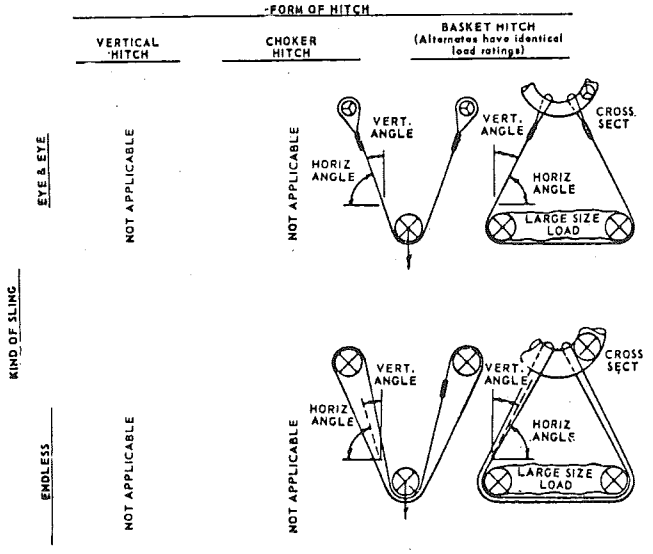
Represents a contact surface which shall have a diameter of curvature at least double the diameter of the rope.

Represents a contact surface which shall have a diameter of curvature at least 8 times the diameter of the rope.

Represents a load in a choker hitch and illustration the rotary force on the load and/or the slippage of the rope in contact with the load. Diameter of curvature of load surface shall be at least double the diameter of the rope.

Figure D–5

Basic Sling Configurations with Vertical Legs



Notes: For vertical angles of 5° or less, refer to Figure D–4 "basic sling configuration with vertical legs."

See Figure D–4 for explanation of symbols.

Figure D–5

Sling Configurations with Angled Legs

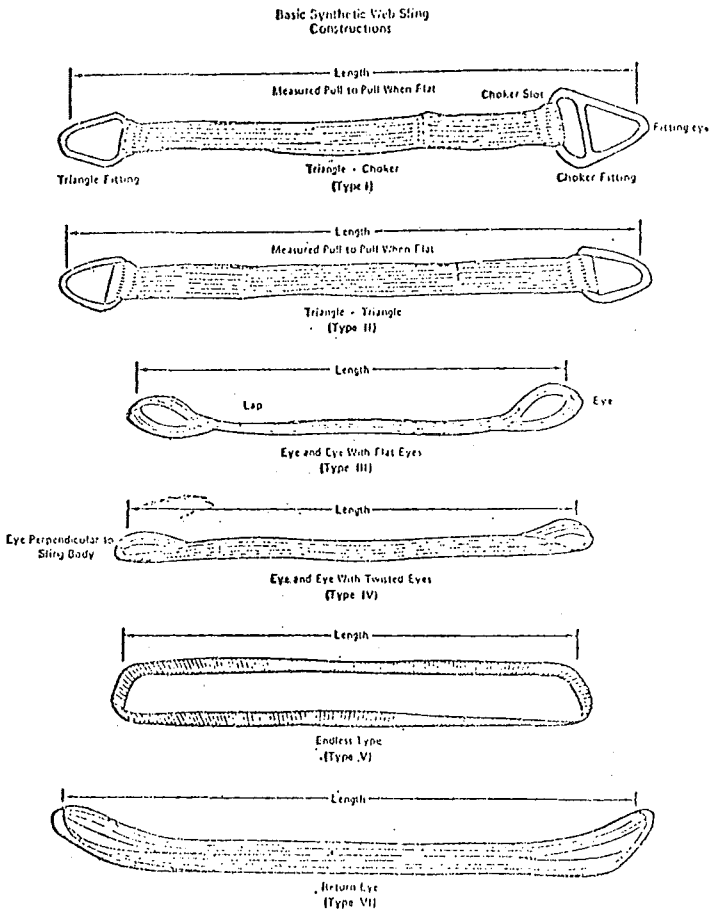


Figure D-6

Basic Synthetic Web Sling Constructions

TABLE D-20

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS
1,000 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-20: Part 1--Types I, II, III, and IV)

Sling Body Width, Inches	Triangle – Choker Slings, Type I; Triangle – Triangle Slings, Type II; Eye & Eye with Flat Eye Slings, Type III; Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,000	750	2,000	1,700	1,400	1,000
2	2,000	1,500	4,000	3,500	2,800	2,000
3	3,000	2,200	6,000	5,200	4,200	3,000
4	4,000	3,000	8,000	6,900	5,700	4,000
5	5,000	3,700	10,000	8,700	7,100	5,000
6	6,000	4,500	12,000	10,400	8,500	6,000

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-20: Part 2--Type V)

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,600	1,300	3,200	2,800	2,300	1,600
2	3,200	2,600	6,400	5,500	4,500	3,200
3	4,800	3,800	9,600	8,300	6,800	4,800
4	6,400	5,100	12,800	11,100	9,000	6,400
5	8,000	6,400	16,000	13,900	11,300	8,000
6	9,600	7,700	19,200	16,600	13,600	9,600

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-20: Part 3--Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	800	650	1,600	1,400	1,150	800
2	1,600	1,300	3,200	2,800	2,300	1,600
3	2,400	1,950	4,800	4,150	3,400	2,400
4	3,200	2,600	6,400	5,500	4,500	3,200
5	4,000	3,250	8,000	6,900	5,650	4,000
6	4,800	3,800	9,600	8,300	6,800	4,800

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

TABLE D-21

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS
1,200 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-21: Part 1--Types I, II, III, and IV)

Sling Body Width, Inches	Triangle – Choker Slings, Type I; Triangle – Triangle Slings, Type II; Eye & Eye with Flat Eye Slings, Type III; Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,200	900	2,400	2,100	1,700	1,200
2	2,400	1,800	4,800	4,200	3,400	2,400
3	3,600	2,700	7,200	6,200	5,100	3,600
4	4,800	3,600	9,600	8,300	6,800	4,800
5	6,000	4,500	12,000	10,400	8,500	6,000
6	7,200	5,400	14,400	12,500	10,200	7,200

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-21: Part 2--Type V)

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,900	1,500	3,800	3,300	2,700	1,900
2	3,800	3,000	7,600	6,600	5,400	3,800
3	5,800	4,600	11,600	10,000	8,200	5,800
4	7,700	6,200	15,400	13,300	10,900	7,700
5	9,600	7,700	19,200	16,600	13,600	9,600
6	11,500	9,200	23,000	19,900	16,300	11,500

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-21: Part 3--Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	950	750	1,900	1,650	1,350	950
2	1,900	1,500	3,800	3,300	2,700	1,900
3	2,850	2,250	5,700	4,950	4,050	2,850
4	3,800	3,000	7,600	6,600	5,400	3,800
5	4,750	3,750	9,500	8,250	6,750	4,750
6	5,800	4,600	11,600	10,000	8,200	5,800

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

TABLE D-22

RATED CAPACITY IN POUNDS SYNTHETIC WEB SLINGS
1,600 LBS. PER INCH OF WIDTH SINGLE PLY

(TABLE D-22: Part 1--Types I, II, III, and IV)

Sling Body Width, Inches	Triangle – Choker Slings, Type I Triangle – Triangle Slings, Type II Eye & Eye with Flat Eye Slings, Type III Eye & Eye with Twisted Eye Slings, Type IV					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,600	1,200	3,200	2,800	2,300	1,600
2	3,200	2,400	6,400	5,500	4,500	3,200
3	4,800	3,600	9,600	8,300	6,800	4,800
4	6,400	4,800	12,800	11,100	9,000	6,400
5	8,000	6,000	16,000	13,800	11,300	8,000
6	9,600	7,200	19,200	16,600	13,600	9,600

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-22: Part 2--Type V)

Sling Body Width, Inches	Endless Slings, Type V					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	2,600	2,100	5,200	4,500	3,700	2,600
2	5,100	4,100	10,200	8,800	7,200	5,100
3	7,700	6,200	15,400	13,300	10,900	7,700
4	10,100	8,200	20,400	17,700	14,400	10,200
5	12,800	10,200	25,600	22,200	18,100	12,800
6	15,400	12,300	30,800	26,700	21,800	15,400

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

(TABLE D-22: Part 3--Type VI)

Sling Body Width, Inches	Return Eye Slings, Type VI					
	Vert.	Choker	Vert. Basket	30° Basket	45° Basket	60° Basket
1	1,050	1,050	2,600	2,250	1,850	1,300
2	2,600	2,100	5,200	4,500	3,700	2,600
3	3,900	3,150	7,800	6,750	5,500	3,900
4	5,100	4,100	10,200	8,800	7,200	5,100
5	6,400	5,150	12,800	11,050	9,050	6,400
6	7,700	6,200	15,400	13,300	10,900	7,700

Notes:
1. All angles shown are measured from the vertical.
2. Capacities for intermediate widths not shown may be obtained by interpolation.

[Order 76-6, § 296-24-29431, filed 3/1/76.]

Part E

HAZARDOUS MATERIALS, FLAMMABLE AND COMBUSTIBLE LIQUIDS, SPRAY FINISHING, DIP TANKS

WAC

296-24-295 Compressed gases (general requirements).
296-24-29501 Inspection of compressed gas cylinders.
296-24-29503 Compressed gases.
296-24-29505 Safety relief devices for compressed gas containers.
296-24-310 Acetylene.
296-24-31001 Cylinders.
296-24-31003 Piped systems.
296-24-31005 Generators and filling cylinders.
296-24-315 Hydrogen.
296-24-31501 General.
296-24-31503 Gaseous hydrogen systems.
296-24-31505 Liquefied hydrogen systems.
296-24-320 Oxygen.
296-24-32001 Scope.
296-24-32003 Bulk oxygen systems.
296-24-325 Nitrous oxide.
296-24-330 Flammable and combustible liquids.
296-24-33001 Definitions.
296-24-33003 Scope.
296-24-33005 Tank storage.
296-24-33007 Piping, valves, and fittings.
296-24-33009 Container and portable tank storage.
296-24-33011 Industrial plants.
296-24-33013 Bulk plants.
296-24-33015 Service stations.
296-24-33017 Processing plants.

296-24-33019 Refineries, chemical plants, and distilleries.
296-24-370 Spray finishing using flammable and combustible materials.
296-24-37001 Definitions.
296-24-37003 Spray booths.
296-24-37005 Electrical and other sources of ignition.
296-24-37007 Ventilation.
296-24-37009 Flammable and combustible liquids—Storage and handling.
296-24-37011 Protection.
296-24-37013 Operations and maintenance.
296-24-37015 Fixed electrostatic apparatus.
296-24-37017 Electrostatic hand spraying equipment.
296-24-37019 Drying, curing, or fusion apparatus.
296-24-37021 Automobile undercoating in garages.
296-24-37023 Powder coating.
296-24-37025 Organic peroxides and dual component coatings.
296-24-37027 Scope.
296-24-405 Dip tanks containing flammable or combustible liquids.
296-24-40501 Definitions.
296-24-40503 Ventilation.
296-24-40505 Construction of dip tanks.
296-24-40507 Liquids used in dip tanks, storage and handling.
296-24-40509 Electrical and other sources of ignition.
296-24-40511 Operations and maintenance.
296-24-40513 Extinguishment.
296-24-40515 Special dip tank applications.
296-24-450 Chlorine cylinders used in chlorinator systems.

WAC 296-24-295 Compressed gases (general requirements).

[Order 73-5, § 296-24-295, filed 5/9/73 and Order 73-4, § 296-24-295, filed 5/7/73.]

WAC 296-24-29501 Inspection of compressed gas cylinders. Each employer shall determine that compressed gas cylinders under his control are in a safe condition to the extent that this can be determined by visual inspection. Visual and other inspections shall be conducted as prescribed in the hazardous materials regulations of the department of transportation (49 CFR Parts 171-179 and 14 CFR Part 103). Where those regulations are not applicable, visual and other inspections shall be conducted in accordance with Compressed Gas Association Pamphlets C-6-1968 and C-8-1962.

[Order 73-5, § 296-24-29501, filed 5/9/73 and Order 73-4, § 296-24-29501, filed 5/7/73.]

WAC 296-24-29503 Compressed gases. The in-plant handling, storage, and utilization of all compressed gases in cylinders, portable tanks, rail tankcars, or motor vehicle cargo tanks shall be in accordance with Compressed Gas Association Pamphlet P-1-1965.

[Order 73-5, § 296-24-29503, filed 5/9/73 and Order 73-4, § 296-24-29503, filed 5/7/73.]

WAC 296-24-29505 Safety relief devices for compressed gas containers. Compressed gas cylinders, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S-1.1-1963 and 1965 addenda and S-1.2-1963.

[Order 73-5, § 296-24-29505, filed 5/9/73 and Order 73-4, § 296-24-29505, filed 5/7/73.]

WAC 296-24-310 Acetylene.

[Order 73-5, § 296-24-310, filed 5/9/73 and Order 73-4, § 296-24-310, filed 5/7/73.]

WAC 296-24-31001 Cylinders. The in-plant transfer, handling, storage, and utilization of acetylene in cylinders shall be in accordance with Compressed Gas Association Pamphlet G-1-1966.

[Order 73-5, § 296-24-31001, filed 5/9/73 and Order 73-4, § 296-24-31001, filed 5/7/73.]

WAC 296-24-31003 Piped systems. The piped systems for the in-plant transfer and distribution of acetylene shall be designed, installed, maintained, and operated in accordance with Compressed Gas Association Pamphlet G-1.3-1959.

[Order 73-5, § 296-24-31003, filed 5/9/73 and Order 73-4, § 296-24-31003, filed 5/7/73.]

WAC 296-24-31005 Generators and filling cylinders. Plants for the generation of acetylene and the charging (filling) of acetylene cylinders shall be designed, constructed, and tested in accordance with the standards prescribed in Compressed Gas Association Pamphlet G-1.4-1966.

[Order 73-5, § 296-24-31005, filed 5/9/73 and Order 73-4, § 296-24-31005, filed 5/7/73.]

WAC 296-24-315 Hydrogen.

[Order 73-5, § 296-24-315, filed 5/9/73 and Order 73-4, § 296-24-315, filed 5/7/73.]

WAC 296-24-31501 General. (1) Definitions as used in this section.

(a) Gaseous hydrogen system is one in which the hydrogen is delivered, stored and discharged in the gaseous form to consumer's piping. The system includes stationary or movable containers, pressure regulators, safety relief devices, manifolds, interconnecting piping and controls. The system terminates at the point where hydrogen at service pressure first enters the consumer's distribution piping.

(b) Approved—Means unless otherwise indicated listed or approved by the following nationally recognized testing laboratories: Underwriters Laboratories, Inc., and Factory Mutual Engineering Corp.

(c) Listed—See "approved."

(d) ASME—American Society of Mechanical Engineers.

(e) DOT specifications—Regulations of the department of transportation published in 49 CFR Chapter I.

(f) DOT regulations—See WAC 296-24-315.

(2) Scope.

(a) Gaseous hydrogen systems.

(i) WAC 296-24-31503 applies to the installation of gaseous hydrogen systems on consumer premises where the hydrogen supply to the consumer premises originates outside the consumer premises and is delivered by mobile equipment.

(ii) WAC 296-24-31503 does not apply to gaseous hydrogen systems having a total hydrogen content of less than 400 cubic feet, nor to hydrogen manufacturing plants or other establishments operated by the hydrogen

supplier or his agent for the purpose of storing hydrogen and refilling portable containers, trailers, mobile supply trucks, or tank cars.

(b) Liquefied hydrogen systems.

(i) WAC 296-24-31505 applies to the installation of liquefied hydrogen systems on consumer premises.

(ii) WAC 296-24-31505 does not apply to liquefied hydrogen portable containers of less than 150 liters (39.63 gallons) capacity; nor to liquefied hydrogen manufacturing plants or other establishments operated by the hydrogen supplier or his agent for the sole purpose of storing liquefied hydrogen and refilling portable containers, trailers, mobile supply trucks or tank cars.

[Order 73-5, § 296-24-31501, filed 5/9/73 and Order 73-4, § 296-24-31501, filed 5/7/73.]

WAC 296-24-31503 Gaseous hydrogen systems. (1) Design.

(a) Containers.

(i) Hydrogen containers shall comply with one of the following:

(A) Designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968.

(B) Designed, constructed, tested and maintained in accordance with U.S. Department of Transportation specifications and regulations.

(ii) Permanently installed containers shall be provided with substantial noncombustible supports on firm noncombustible foundations.

(iii) Each portable container shall be legibly marked with the name "hydrogen" in accordance with "marking compressed gas containers to identify the material contained" ANSI Z48.1-1954. Each manifolded hydrogen supply unit shall be legibly marked with the name hydrogen or a legend such as "this unit contains hydrogen."

(b) Safety relief devices.

(i) Hydrogen containers shall be equipped with safety relief devices as required by the ASME Boiler and Pressure Vessel Code, Section VIII Unfired Pressure Vessels, 1968 or the DOT specifications and regulations under which the container is fabricated.

(ii) Safety relief devices shall be arranged to discharge upward and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container, adjacent structure of personnel. This requirement does not apply to DOT specification containers having an internal volume of 2 cubic feet or less.

(iii) Safety relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(c) Piping, tubing, and fittings.

(i) Piping, tubing, and fittings shall be suitable for hydrogen service and for the pressures and temperatures involved. Case iron pipe and fittings shall not be used.

(ii) Piping and tubing shall conform to Section 2—"Industrial Gas and Air Piping"—Code for Pressure Piping, ANSI B31.1-1967 with addenda B31.1-1969.

(iii) Joints in piping and tubing may be made by welding or brazing or by use of flanged, threaded, socket, or compression fittings. Gaskets and thread sealants shall be suitable for hydrogen service.

(d) Equipment assembly.

(i) Valves, gauges, regulators, and other accessories shall be suitable for hydrogen service.

(ii) Installation of hydrogen systems shall be supervised by personnel familiar with proper practices with reference to their construction and use.

(iii) Storage containers, piping, valves, regulating equipment, and other accessories shall be readily accessible, and shall be protected against physical damage and against tampering.

(iv) Cabinets or housings containing hydrogen control or operating equipment shall be adequately ventilated.

(v) Each mobile hydrogen supply unit used as part of a hydrogen system shall be adequately secured to prevent movement.

(vi) Mobile hydrogen supply units shall be electrically bonded to the system before discharging hydrogen.

(e) Marking. The hydrogen storage location shall be permanently placarded as follows: "HYDROGEN—FLAMMABLE GAS—NO SMOKING—NO OPEN FLAMES," or equivalent.

(f) Testing. After installations, all piping, tubing, and fittings shall be tested and proved hydrogen gas tight at maximum operating pressure.

(2) Location.

(a) General.

(i) The system shall be located so that it is readily accessible to delivery equipment and to authorized personnel.

(ii) Systems shall be located above ground.

(iii) Systems shall not be located beneath electric power lines.

(iv) Systems shall not be located close to flammable liquid piping or piping of other flammable gases.

(v) Systems near aboveground flammable liquid storage shall be located on ground higher then the flammable liquid storage except when dikes, diversion curbs, grading, or separating solid walls are used to prevent accumulation of flammable liquids under the system.

(b) Specific requirements.

(i) The location of a system, as determined by the maximum total contained volume of hydrogen, shall be in the order of preference as indicated by Roman numerals in Table H-1.

TABLE H-1

Nature of location	Size of hydrogen system		
	Less than 3,000 CF	3,000 CF to 15,000 CF	In excess of 15,000 CF
Outdoors	I	I	I.
In a separate building	II	II	II.
In a special room	III	III	Not permitted.
Inside buildings not in a special room and exposed to other occupancies	IV	Not permitted.	Not permitted.

(ii) The minimum distance in feet from a hydrogen system of indicated capacity located outdoors, in separate buildings or in special rooms to any specified outdoor exposure shall be in accordance with Table H-2.

(iii) The distances in Table H-2 Items 1, 14, and 3 to 10 inclusive do not apply where protective structures such as adequate fire walls are located between the system and the exposure.

(iv) Hydrogen systems of less than 3,000 CF when located inside buildings and exposed to other occupancies shall be situated in the building so that the system will be as follows:

(A) In an adequately ventilated area as in (3)(b)(ii) of this section.

(B) Twenty feet from stored flammable materials or oxidizing gases.

(C) Twenty-five feet from open flames, ordinary electrical equipment or other sources of ignition.

(D) Twenty-five feet from concentrations of people.

(E) Fifty feet from intakes of ventilation or air-conditioning equipment and air compressors.

(F) Fifty feet from other flammable gas storage.

(G) Protected against damage or injury due to falling objects or working activity in the area.

(H) More than one system of 3,000 CF or less may be installed in the same room, provided the systems are separated by at least 50 feet. Each such system shall meet all of the requirements of this section.

(3) Design consideration at specific locations.

(a) Outdoor locations.

(i) Where protective walls or roofs are provided, they shall be constructed of noncombustible materials.

(ii) Where the enclosing sides adjoin each other, the area shall be properly ventilated.

(iii) Electrical equipment shall meet the requirements for Class I, Division 2 hazardous locations of WAC 296-25-95613.

(b) Separate buildings.

(i) Separate buildings shall be built of at least noncombustible construction. Windows and doors shall be located so as to be readily accessible in case of emergency. Windows shall be of glass or plastic in metal frames.

(ii) Adequate ventilation to the outdoors shall be provided. Inlet openings shall be located near the floor in exterior walls only. Outlet openings shall be located at the high point of the room in exterior walls or roof. Inlet and outlet openings shall each have minimum total area of one square foot per 1,000 cubic feet of room volume. Discharge from outlet openings shall be directed or conducted to a safe location.

(iii) Explosion venting shall be provided in exterior walls or roof only. The venting area shall be equal to not less than 1 square foot per 30 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light noncombustible material, preferably single thickness, single strength glass; lightly fastened hatch covers; lightly fastened swinging doors in exterior walls opening outward; lightly fastened walls or roof designed to relieve at a maximum pressure of 25 pounds per square foot.

(iv) There shall be no sources of ignition from open flames, electrical equipment, or heating equipment.

(v) Electrical equipment shall meet the requirements for Class I, Division 2 hazardous locations of WAC 296-24-95613.

(vi) Heating, if provided, shall be by steam, hot water, or other indirect means.

(c) Special rooms.

(i) Floor, walls, and ceiling shall have a fire-resistance rating of at least 2 hours. Walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall shall be an exterior wall. Openings to other parts of the building shall not be permitted. Windows and doors shall be in exterior walls and shall be located so as to be readily accessible in case of emergency. Windows shall be of glass or plastic in metal frames.

(ii) Ventilation shall be as provided in (3)(b)(ii) of this section.

(iii) Explosion venting shall be as provided in (3)(b)(iii) of this section.

(iv) There shall be no sources of ignition from open flames, electrical equipment or heating equipment.

(v) Electrical equipment shall meet the requirements for Class I, Division 2 hazardous locations of WAC 296-24-95613.

(vi) Heating, if provided, shall be by steam, hot water, or indirect means.

(4) Operating instructions. For installations which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(5) Maintenance.

(a) The equipment and functioning of each charged gaseous hydrogen system shall be maintained in a safe operating condition in accordance with the requirements of this section. The area within 15 feet of any hydrogen

container shall be kept free of dry vegetation and combustible material.

TABLE H-2

Type of outdoor exposure		Size of hydrogen system: Less than 3,000 CF	3,000 CF to 15,000 CF	In excess of 15,000 CF
1. Building or structure	Wood frame construction*	10	25	50
	Heavy timber, noncombustible or ordinary construction*	0	10	**25
	Fire-resistive construction*	0	0	0
2. Wall openings	Not above any part of a system	10	10	10
	Above any part of a system	25	25	25
3. Flammable liquids above ground	0 to 1,000 gallons	10	25	25
	In excess of 1,000 gallons	25	50	50
4. Flammable liquids below ground—0 to 1,000 gallons	Tank	10	10	10
	Vent or fill opening of tank	25	25	25
5. Flammable liquids below ground—in excess of 1,000 gallons	Tank	20	20	20
	Vent or fill opening of tank	25	25	25
6. Flammable gas storage, either high pressure or low pressure	0 to 15,000 CF capacity	10	25	25
	In excess of 15,000 CF capacity	25	50	50
7. Oxygen storage	12,000 CF or less	Refer to NFPA No. 51, gas systems for welding and cutting (1969).		
	More than 12,000 CF	Refer to NFPA No. 566, bulk oxygen systems at consumer sites (1969).		
8. Fast burning solids such as ordinary lumber, excelsior or paper		50	50	25
9. Slow burning solids such as heavy timber or coal		25	25	25
10. Open flames and other sources of ignition		25	25	50

TABLE H-2

Type of outdoor exposure	Size of hydrogen system: Less than 3,000 CF	3,000 CF to 15,000 CF	In excess of 15,000 CF
11. Air compressor intakes or inlets to ventilating or air-condition equipment	50	50	50
12. Concentration of people***	25	50	50
13. Public sidewalks	15	15	15
14. Line of adjoining property which may be built upon	5	5	5

*Refer to NFPA No. 220 standard types of building construction for definitions of various types of construction. (1969 Ed.)

**But not less than one-half the height of adjacent side wall of the structure.

***In congested areas such as offices, lunchrooms, locker rooms, time-clock areas, and places of public assembly.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-31503, filed 4/19/85; Order 76-6, § 296-24-31503, filed 3/1/76; Order 73-5, § 296-24-31503, filed 5/9/73 and Order 73-4, § 296-24-31503, filed 5/7/73.]

WAC 296-24-31505 Liquefied hydrogen systems. (1) Design.

(a) Containers.

(i) Hydrogen containers shall comply with the following: Storage containers shall be designed, constructed, and tested in accordance with appropriate requirements of the ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels (1968) or applicable provisions of API Standard 620, Recommended Rules for Design and Construction of Large, Welded, Low-Pressure Storage Tanks, Second Edition (June 1963) and Appendix R (April 1965).

(ii) Portable containers shall be designed, constructed and tested in accordance with DOT specifications and regulations.

(b) Supports. Permanently installed containers shall be provided with substantial noncombustible supports securely anchored on firm noncombustible foundations. Steel supports in excess of 18 inches in height shall be protected with a protective coating having a 2-hour fire-resistance rating.

(c) Marking. Each container shall be legibly marked to indicate "LIQUEFIED HYDROGEN—FLAMMABLE GAS."

(d) Safety relief devices.

(i) Stationary liquefied hydrogen containers shall be equipped with safety relief devices sized in accordance with CGA Pamphlet S-1-1966, Part 3, Safety Relief Device Standards for Compressed Gas Storage Containers.

(A) Portable liquefied hydrogen containers complying with the U.S. Department of Transportation regulations shall be equipped with safety relief devices as required in the U.S. Department of Transportation specifications and regulations. Safety relief devices shall be sized in accordance with the requirements of CGA Pamphlet S-1-1966, Safety Relief Device Standards, Part 1, Compressed Gas Cylinders and Part 2, Cargo and Portable Tank Containers.

(ii) Safety relief devices shall be arranged to discharge unobstructed to the outdoors and in such a manner as to prevent impingement of escaping liquid or gas upon the container, adjacent structures or personnel. See (2)(a)(vi) of this section for venting of safety relief devices in special locations.

(iii) Safety relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(iv) Safety relief devices shall be provided in piping wherever liquefied hydrogen could be trapped between closures

(e) Piping, tubing, and fittings.

(i) Piping, tubing, and fittings and gasket and thread sealants shall be suitable for hydrogen service at the pressures and temperatures involved. Consideration shall be given to the thermal expansion and contraction of piping systems when exposed to temperature fluctuations of ambient to liquefied hydrogen temperatures.

(ii) Gaseous hydrogen piping and tubing (above—20°F) shall conform to the applicable sections of Pressure Piping Section 2—Industrial Gas and Air Piping, ANSI B31.1-1967 with addenda B31.1-1969. Design of liquefied hydrogen or cold (-20°F or below) gas piping shall use Petroleum Refinery Piping ANSI B31.3-1966 or Refrigeration Piping ANSI B31.5-1966 with addenda B31.5a-1968 as a guide.

(iii) Joints in piping and tubing shall preferably be made by welding or brazing; flanged, threaded, socket, or suitable compression fittings may be used.

(iv) Means shall be provided to minimize exposure of personnel to piping operating at low temperatures and to prevent air condensate from contacting piping, structural members, and surfaces not suitable for cryogenic temperatures. Only those insulating materials which are rated nonburning in accordance with ASTM Procedures D1692-68 may be used. Other protective means may be used to protect personnel. The insulation shall be designed to have a vapor-tight seal in the outer covering to prevent the condensation of air and subsequent oxygen enrichment within the insulation. The insulation material and outside shield shall also be of adequate design to prevent attrition of the insulation due to normal operating conditions.

(v) Uninsulated piping and equipment which operate at liquefied-hydrogen temperature shall not be installed above asphalt surfaces or other combustible materials in order to prevent contact of liquid air with such materials. Drip pans may be installed under uninsulated piping and equipment to retain and vaporize condensed liquid air.

(f) Equipment assembly.

(i) Valves, gauges, regulators, and other accessories shall be suitable for liquefied hydrogen service and for the pressures and temperatures involved.

(ii) Installation of liquefied hydrogen systems shall be supervised by personnel familiar with proper practices and with reference to their construction and use.

(iii) Storage containers, piping, valves, regulating equipment, and other accessories shall be readily accessible and shall be protected against physical damage and against tampering. A shutoff valve shall be located in liquid product withdrawal lines as close to the container as practical. On containers of over 2,000 gallons capacity, this shutoff valve shall be of the remote control type with no connections, flanges, or other appurtenances (other than a welded manual shutoff valve) allowed in the piping between the shutoff valve and its connection to the inner container.

(iv) Cabinets or housings containing hydrogen control equipment shall be ventilated to prevent any accumulation of hydrogen gas.

(g) Testing.

(i) After installation, all field-erected piping shall be tested and proved hydrogen gas-tight at operating pressure and temperature.

(ii) Containers if out of service in excess of 1 year shall be inspected and tested as outlined in (1) of this section. The safety relief devices shall be checked to determine if they are operable and properly set.

(h) Liquefied hydrogen vaporizers.

(i) The vaporizer shall be anchored and its connecting piping shall be sufficiently flexible to provide for the effect of expansion and contraction due to temperature changes.

(ii) The vaporizer and its piping shall be adequately protected on the hydrogen and heating media sections with safety relief devices.

(iii) Heat used in a liquefied hydrogen vaporizer shall be indirectly supplied utilizing media such as air, steam, water, or water solutions.

(iv) A low temperature shutoff switch shall be provided in the vaporizer discharge piping to prevent flow of liquefied hydrogen in the event of the loss of the heat source.

(i) Electrical systems.

(i) Electrical wiring and equipment located within 3 feet of a point where connections are regularly made and disconnected, shall meet the requirements of WAC 296-24-956 through 296-24-960 for Class I, Division 1 locations.

(ii) Except as provided in (l) of this section, electrical wiring, and equipment located within 25 feet of a point where connections are regularly made and disconnected or within 25 feet of a liquid hydrogen storage container, shall meet the requirements of WAC 296-24-956 through 296-24-960 for Class I, Division 2 locations. When equipment approved for Class I, environments is not commercially available, the equipment may be:

(A) Purged or ventilated in accordance with NFPA No. 496-1967, Standard for Purged Enclosures for Electrical Equipment in Hazardous Locations,

(B) Intrinsically safe, or

(C) Approved for Class I, Group C atmospheres. This requirement does not apply to electrical equipment which is installed on mobile supply trucks or tank cars from which the storage container is filled.

(j) Bonding and grounding. The liquefied hydrogen container and associated piping shall be electrically bonded and grounded.

(2) Location of liquefied hydrogen storage.

(a) General requirements.

(i) The storage containers shall be located so that they are readily accessible to mobile supply equipment at ground level and to authorized personnel.

(ii) The containers shall not be exposed by electric power lines, flammable liquid lines, flammable gas lines, or lines carrying oxidizing materials.

(iii) When locating liquefied hydrogen storage containers near above-ground flammable liquid storage or liquid oxygen storage, it is advisable to locate the liquefied hydrogen container on ground higher than flammable liquid storage or liquid oxygen storage.

(iv) Where it is necessary to locate the liquefied hydrogen container on ground that is level with or lower than adjacent flammable liquid storage or liquid oxygen storage, suitable protective means shall be taken (such as by diking, diversion, curbs, grading), with respect to the adjacent flammable liquid storage or liquid oxygen storage, to prevent accumulation of liquids within 50 feet of the liquefied hydrogen container.

(v) Storage sites shall be fenced and posted to prevent entrance by unauthorized personnel. Sites shall also be placarded as follows: "Liquefied hydrogen—Flammable gas—No smoking—No open flames."

(vi) If liquefied hydrogen is located in (as specified in Table H-3) a separate building, in a special room, or inside buildings when not in a special room and exposed to other occupancies, containers shall have the safety relief devices vented unobstructed to the outdoors at a minimum elevation of 25 feet above grade to a safe location as required in (l)(d)(ii) of this section.

(b) Specific requirements.

(i) The location of liquefied hydrogen storage, as determined by the maximum total quantity of liquefied hydrogen, shall be in the order of preference as indicated by Roman numerals in the following Table H-3.

TABLE H-3

MAXIMUM TOTAL QUANTITY OF LIQUEFIED HYDROGEN STORAGE PERMITTED

Nature of location	Size of hydrogen storage (capacity in gallons)			
	39.63 (150 liters) to 50	51 to 300	301 to 600	In excess of 600
Outdoors	I	I	I	I
In a separate building	II	II	II	Not permitted.
In a special room	III	III	Not permitted	Not permitted.
Inside buildings not in a special room and exposed to other occupancies	IV	Not permitted	Not permitted	Not permitted.

Note: This table does not apply to the storage in dewars of the type generally used in laboratories for experimental purposes.

(ii) The minimum distance in feet from liquefied hydrogen systems of indicated storage capacity located outdoors, in a separate building, or in a special room to any specified exposure shall be in accordance with Table H-4.

TABLE H-4

MINIMUM DISTANCE (FEET) FROM LIQUEFIED HYDROGEN SYSTEMS TO EXPOSURE

Type of exposure	Liquefied hydrogen storage (capacity in gallons)		
	39.63 (150 liters) to 3,500	3,501 to 15,000	15,001 to 30,000
1. Fire-resistive building and fire walls*	5	5	5
2. Noncombustible building*	25	50	75
3. Other buildings*	50	75	100
4. Wall openings, air-compressor intakes, inlets for air-conditioning or ventilating equipment	75	75	75
5. Flammable liquids (above ground and vent or fill openings if below ground) (see 513 and 514)	50	75	100
6. Between stationary liquefied hydrogen containers	5	5	5
7. Flammable gas storage—	50	75	100

TABLE H-4

MINIMUM DISTANCE (FEET) FROM LIQUEFIED HYDROGEN SYSTEMS TO EXPOSURE

Type of exposure	Liquefied hydrogen storage (capacity in gallons) 39.63 (150 liters) to 3,500	3,501 to 15,000	15,001 to 30,000
8. Liquid oxygen storage and other oxidizers (see 513 and 514)	100	100	100
9. Combustible solids	50	75	100
10. Open flames, smoking, and welding	50	50	50
11. Concentrations of people**	75	75	75
12. Public ways, railroads, and property lines	25	50	75

*Refer to standard types of building construction, NFPA No. 220-1969 for definitions of various types of construction.

**In congested areas such as offices, lunchrooms, locker rooms, time-clock areas, and places of public assembly.

Note 1: The distance in Nos. 2, 3, 5, 7, 9, and 12 in Table H-4 may be reduced where protective structures, such as firewalls equal to height of top of the container, to safeguard the liquefied hydrogen storage system, are located between the liquefied hydrogen storage installation and the exposure.

Note 2: Where protective structures are provided, ventilation and confinement of product should be considered. The 5-foot distance in Nos. 1 and 6 facilitates maintenance and enhances ventilation.

(c) Handling of liquefied hydrogen inside buildings other than separate buildings and special rooms. Portable liquefied hydrogen containers of 50 gallons or less capacity as permitted in Table H-3 and in compliance with (2)(a)(vi) of this section when housed inside buildings not located in a special room and exposed to other occupancies shall comply with the following minimum requirements:

(i) Be located 20 feet from flammable liquids and readily combustible materials such as excelsior or paper.

(ii) Be located 25 feet from ordinary electrical equipment and other sources of ignition including process or analytical equipment.

(iii) Be located 25 feet from concentrations of people.

(iv) Be located 50 feet from intakes of ventilation and air-conditioning equipment or intakes of compressors.

(v) Be located 50 feet from storage of other flammable-gases or storage of oxidizing gases.

(vi) Containers shall be protected against damage or injury due to falling objects or work activity in the area.

(vii) Containers shall be firmly secured and stored in an upright position.

(viii) Welding or cutting operations, and smoking shall be prohibited while hydrogen is in the room.

(ix) The area shall be adequately ventilated. Safety relief devices on the containers shall be vented directly outdoors or to a suitable hood. See (1)(d)(ii) of this section and (2)(a)(vi) of this section.

(3) Design considerations at specific locations.

(a) Outdoor locations.

(i) Outdoor location shall mean outside of any building or structure, and includes locations under a weather shelter or canopy provided such locations are not enclosed by more than two walls set at right angles and are provided with vent-space between the walls and vented roof or canopy.

(ii) Roadways and yard surfaces located below liquefied hydrogen piping, from which liquid air may drop, shall be constructed of noncombustible materials.

(iii) If protective walls are provided, they shall be constructed of noncombustible materials and in accordance with the provisions of (3)(a)(i) of this section as applicable.

(iv) Electrical wiring and equipment shall comply with (l)(i)(i) and (ii) of this section.

(v) Adequate lighting shall be provided for nighttime transfer operation.

(b) Separate buildings.

(i) Separate buildings shall be of light noncombustible construction on a substantial frame. Walls and roofs shall be lightly fastened and designed to relieve at a maximum internal pressure of 25 pounds per square foot. Windows shall be of shatterproof glass or plastic in metal frames. Doors shall be located in such a manner that they will be readily accessible to personnel in an emergency.

(ii) Adequate ventilation to the outdoors shall be provided. Inlet openings shall be located near the floor level in exterior walls only. Outlet openings shall be located at the high point of the room in exterior walls or roof. Both the inlet and outlet vent openings shall have a minimum total area of 1 square foot per 1,000 cubic feet of room volume. Discharge from outlet openings shall be directed or conducted to a safe location.

(iii) There shall be no sources of ignition.

(iv) Electrical wiring and equipment shall comply with (l)(i)(i) and (ii) of this section except that the provisions of (l)(i)(ii) of this section shall apply to all electrical wiring and equipment in the separate building.

(v) Heating, if provided, shall be by steam, hot water, or other indirect means.

(c) Special rooms.

(i) Floors, walls, and ceilings shall have a fire resistance rating of at least 2 hours. Walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall shall be an exterior wall. Openings to other parts of the building shall not be permitted. Windows and doors shall be in exterior walls and doors shall be located in such a manner that they will be accessible in an emergency. Windows shall be of shatterproof glass or plastic in metal frames.

(ii) Ventilation shall be as provided in (3)(b)(ii) of this section.

(iii) Explosion venting shall be provided in exterior walls or roof only. The venting area shall be equal to not less than 1 square foot per 30 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light noncombustible material; lightly fastened hatch covers; lightly fastened swinging doors opening outward in exterior walls; lightly fastened

walls or roofs designed to relieve at a maximum pressure of 25 pounds per square foot.

(iv) There shall be no sources of ignition.

(v) Electrical wiring and equipment shall comply with (l)(i)(i) and (ii) of this section except that the provisions of (l)(i)(ii) of this section shall apply to all electrical wiring and equipment in the special room.

(vi) Heating, if provided, shall be steam, hot water, or by other indirect means.

(4) Operating instructions.

(a) Written instructions. For installation which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(b) Attendant. A qualified person shall be in attendance at all times while the mobile hydrogen supply unit is being unloaded.

(c) Security. Each mobile liquefied hydrogen supply unit used as part of a hydrogen system shall be adequately secured to prevent movement.

(d) Grounding. The mobile liquefied hydrogen supply unit shall be grounded for static electricity.

(5) Maintenance.

(a) The equipment and functioning of each charged liquefied hydrogen system shall be maintained in a safe operating condition in accordance with the requirements of this section. Weeds or similar combustibles shall not be permitted within 25 feet of any liquified hydrogen equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-31505, filed 4/19/85; Order 76-6, § 296-24-31505, filed 3/1/76; Order 73-5, § 296-24-31505, filed 5/9/73 and Order 73-4, § 296-24-31505, filed 5/7/73.]

WAC 296-24-320 Oxygen.

[Order 73-5, § 296-24-320, filed 5/9/73 and Order 73-4, § 296-24-320, filed 5/7/73.]

WAC 296-24-32001 Scope. This section applies to the installation of bulk oxygen systems on industrial and institutional consumer premises. This section does not apply to oxygen manufacturing plants or other establishments operated by the oxygen supplier or his agent for the purpose of storing oxygen and refilling portable containers, trailers, mobile supply trucks, or tank cars, nor to systems having capacities less than those stated in WAC 296-24-32003(1).

[Order 73-5, § 296-24-32001, filed 5/9/73 and Order 73-4, § 296-24-32001, filed 5/7/73.]

WAC 296-24-32003 Bulk oxygen systems. (1) Definitions. As used in this section: A bulk oxygen system is an assembly of equipment, such as oxygen storage containers, pressure regulators, safety devices, vaporizers, manifolds, and interconnecting piping, which has storage capacity of more than 13,000 cubic feet of oxygen, normal temperature and pressure (NTP), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (NTP) including unconnected reserves on hand at the cite. The bulk oxygen system terminates at the point where oxygen at service pressure first enters the supply line. The oxygen containers may be stationary or movable, and the oxygen may be stored as gas or liquid.

(2) Location.

(a) General. Bulk oxygen storage systems shall be located above ground out of doors, or shall be installed in a building of noncombustible construction, adequately vented, and used for that purpose exclusively. The location selected shall be such that containers and associated equipment shall not be exposed by electric power lines, flammable or combustible liquid lines, or flammable gas lines.

(b) Accessibility. The system shall be located so that it is readily accessible to mobile supply equipment at ground level and to authorized personnel.

(c) Leakage. Where oxygen is stored as a liquid, noncombustible surfacing shall be provided in an area in which any leakage of liquid oxygen might fall during operation of the system and filling of a storage container. For purposes of these standards, asphaltic or bituminous paving is considered to be combustible.

(d) Elevation. When locating bulk oxygen systems near above ground flammable or combustible liquid storage which may be either indoors or outdoors, it is advisable to locate the system on ground higher than the flammable or combustible liquid storage.

(e) Dikes. Where it is necessary to locate a bulk oxygen system on ground lower than adjacent flammable or combustible liquid storage suitable means shall be taken (such as by diking, diversion curbs, or grading) with respect to the adjacent flammable or combustible liquid storage to prevent accumulation of liquids under the bulk oxygen system.

(3) Distance between systems and exposures.

(a) General. The minimum distance from any bulk oxygen storage container to exposures, measured in the most direct line except as indicated in (3)(f) and (g) of this section shall be as indicated in (3)(b) to (r) of this section inclusive.

(b) Combustible structures. Fifty feet from any combustible structures.

(c) Fire resistive structures. Twenty-five feet from any structures with fire-resistive exterior walls or sprinklered buildings or other construction, but not less than one-half the height of adjacent side wall of the structure.

(d) Openings. At least 10 feet from any opening in adjacent walls of fire resistive structures. Spacing from such structures shall be adequate to permit maintenance, but shall not be less than 1 foot.

(e) Flammable liquid storage above ground.

Distance (feet)	Capacity (gallons)
50	0-1000
90	1001 or more

(f) Flammable liquid storage below ground.

Distance measured horizontally from oxygen storage container to flammable liquid tank (feet)	Distance from oxygen storage container to filling and vent connections or openings to flammable liquid tank (feet)	Capacity gallons
15	50	0–1000
30	50	1001 or more

(g) Combustible liquid storage above ground.

Distance (feet)	Capacity (gallons)
25	0–1000
50	1001 or more

(h) Combustible liquid storage below ground.

Distance measured horizontally from oxygen storage container to combustible liquid tank (feet)	Distance from oxygen storage container to filling and vent connections or openings to combustible liquid tank (feet)
15	40

(i) Flammable gas storage. (Such as compressed flammable gases, liquefied flammable gases and flammable gases in low pressure gas holders):

Distance (feet)	Capacity (cu. ft. NTP)
50	Less than 5000
90	5000 or more

(j) Highly combustible materials. Fifty feet from solid materials which burn rapidly, such as excelsior or paper.

(k) Slow–burning materials. Twenty–five feet from solid materials which burn slowly, such as coal and heavy timber.

(l) Ventilation. Seventy–five feet in one direction and 35 feet in approximately 90° direction from confining walls (not including firewalls less than 20 feet high) to provide adequate ventilation in courtyards and similar confining areas.

(m) Congested areas. Twenty–five feet from congested areas such as offices, lunchrooms, locker rooms, time clock areas, and similar locations where people may congregate.

(n) Public areas. Fifty feet from places of public assembly.

(o) Patients. Fifty feet from areas occupied by nonambulatory patients.

(p) Sidewalks. Ten feet from any public sidewalk.

(q) Adjacent property. Five feet from any line of adjoining property.

(r) Exceptions. The distances in (3)(b), (c), (e) to (k) inclusive, and (p) and (q) of this section do not apply where protective structures such as firewalls of adequate height to safeguard the oxygen storage systems are located between the bulk oxygen storage installation and the exposure. In such cases, the bulk oxygen storage installation may be a minimum distance of 1 foot from the firewall.

(4) Storage containers.

(a) Foundations and supports. Permanently installed containers shall be provided with substantial noncombustible supports on firm noncombustible foundations.

(b) Construction—Liquid. Liquid oxygen storage containers shall be fabricated from materials meeting the impact test requirements of paragraph UG–84 of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968. Containers operating at pressures above 15 pounds per square inch gage (p.s.i.g.) shall be designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VII—Unfired Pressure Vessels—1968. Insulation surrounding the liquid oxygen container shall be noncombustible.

(c) Construction—Gaseous. High–pressure gaseous oxygen containers shall comply with one of the following:

(i) Designed, constructed, and tested in accordance with appropriate requirements of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968.

(ii) Designed, constructed, tested, and maintained in accordance with DOT specifications and regulations.

(5) Piping, tubing, and fittings.

(a) Selection. Piping, tubing, and fittings shall be suitable for oxygen service and for the pressures and temperatures involved.

(b) Specification. Piping and tubing shall conform to Section 2—Gas and Air Piping Systems of Code for Pressure Piping, ANSI, B31.1–1967 with addenda B31.10a–1969.

(c) Fabrication. Piping or tubing for operating temperatures below –20°F shall be fabricated from materials meeting the impact test requirements of paragraph UG–84 of ASME Boiler and Pressure Vessel Code, Section VIII—Unfired Pressure Vessels—1968, when tested at the minimum operating temperature to which the piping may be subjected in service.

(6) Safety relief devices.

(a) General. Bulk oxygen storage containers, regardless of design pressure shall be equipped with safety relief devices as required by the ASME code or the DOT specifications and regulations.

(b) DOT containers. Bulk oxygen storage containers designed and constructed in accordance with DOT specification shall be equipped with safety relief devices as required thereby.

(c) ASME containers. Bulk oxygen storage containers designed and constructed in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII—Unfired

Pressure Vessel—1968 shall be equipped with safety relief devices meeting the provisions of the Compressed Gas Association Pamphlet "Safety Relief Device Standards for Compressed Gas Storage Containers," S-1, Part 3.

(d) Insulation. Insulation casings on liquid oxygen containers shall be equipped with suitable safety relief devices.

(e) Reliability. All safety relief devices shall be so designed or located that moisture cannot collect and freeze in a manner which would interfere with proper operation of the device.

(7) Liquid oxygen vaporizers.

(a) Mounts and couplings. The vaporizer shall be anchored and its connecting piping be sufficiently flexible to provide for the effect of expansion and contraction due to temperature changes.

(b) Relief devices. The vaporizer and its piping shall be adequately protected on the oxygen and heating medium sections with safety relief devices.

(c) Heating. Heat used in an oxygen vaporizer shall be indirectly supplied only through media such as steam, air, water, or water solutions which do not react with oxygen.

(d) Grounding. If electric heaters are used to provide the primary source of heat, the vaporizing system shall be electrically grounded.

(8) Equipment assembly and installation.

(a) Cleaning. Equipment making up a bulk oxygen system shall be cleaned in order to remove oil, grease or other readily oxidizable materials before placing the system in service.

(b) Joints. Joints in piping and tubing may be made by welding or by use of flanged, threaded, slip, or compression fittings. Gaskets or thread sealants shall be suitable for oxygen service.

(c) Accessories. Valves, gages, regulators, and other accessories shall be suitable for oxygen service.

(d) Installation. Installation of bulk oxygen systems shall be supervised by personnel familiar with proper practices with reference to their construction and use.

(e) Testing. After installation all field erected piping shall be tested and proved gas tight at maximum operating pressure. Any medium used for testing shall be oil free and nonflammable.

(f) Security. Storage containers, piping, valves, regulating equipment, and other accessories shall be protected against physical damage and against tampering.

(g) Venting. Any enclosure containing oxygen control or operating equipment shall be adequately vented.

(h) Placarding. The bulk oxygen storage location shall be permanently placarded to indicate: "OXYGEN—NO SMOKING—NO OPEN FLAMES," or an equivalent warning.

(i) Electrical wiring. Bulk oxygen installations are not hazardous locations as defined and covered by WAC 296-24-956 through 296-24-960. Therefore, general purpose or weatherproof types of electrical wiring and equipment are acceptable depending upon whether the installation is indoors or outdoors. Such equipment shall be installed in accordance with the provisions of WAC 296-24-956 through 296-24-960.

(9) Operating instructions. For installations which require any operation of equipment by the user, legible instructions shall be maintained at operating locations.

(10) Maintenance.

(a) The equipment and functioning of each charged bulk oxygen system shall be maintained in a safe operating condition in accordance with the requirements of this section. Wood and long dry grass shall be cut back within 15 feet of any bulk oxygen storage container.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-32003, filed 4/19/85; Order 76-6, § 296-24-32003, filed 3/1/76; Order 73-5, § 296-24-32003, filed 5/9/73 and Order 73-4, § 296-24-32003, filed 5/7/73.]

WAC 296-24-325 Nitrous oxide. The piped systems for the in-plant transfer and distribution of nitrous oxide shall be designed, installed, maintained, and operated in accordance with Compressed Gas Association Pamphlet G8.1-1964.

[Order 73-5, § 296-24-325, filed 5/9/73 and Order 73-4, § 296-24-325, filed 5/7/73.]

WAC 296-24-330 Flammable and combustible liquids.

[Order 73-5, § 296-24-330, filed 5/9/73 and Order 73-4, § 296-24-330, filed 5/7/73.]

WAC 296-24-33001 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-330 in the section number.

(1) Aerosol shall mean a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure.

(2) Atmospheric tank shall mean a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g.

(3) Automotive service station shall mean that portion of property where flammable or combustible liquids used as motor fuels are stored and dispensed from fixed equipment into the fuel tanks of motor vehicles and shall include any facilities available for the sale and service of tires, batteries, and accessories, and for minor automotive maintenance work. Major automotive repairs, painting, body and fender work are excluded.

(4) Basement shall mean a story of a building or structure having one-half or more of its height below ground level and to which access for fire fighting purposes is unduly restricted.

(5) Boiling point shall mean the boiling point of a liquid at a pressure of 14.7 pounds per square inch absolute (p.s.i.a.) (760 mm.). Where an accurate boiling point is unavailable for the material in question, or for mixtures which do not have a constant boiling point, for purposes of this section the 10 percent point of a distillation performed in accordance with the Standard Method of Test for Distillation of Petroleum Products, ASTM D-86-62, may be used as the boiling point of the liquid.

(6) Boilover shall mean the expulsion of crude oil (or certain other liquids) from a burning tank. The light fractions of the crude oil burnoff producing a heat wave

in the residue, which on reaching a water strata may result in the expulsion of a portion of the contents of the tank in the form of froth.

(7) Bulk plant shall mean that portion of a property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, or container.

(8) Chemical plant shall mean a large integrated plant or that portion of such a plant other than a refinery or distillery where flammable or combustible liquids are produced by chemical reactions or used in chemical reactions.

(9) Closed container shall mean a container as herein defined, so sealed by means of a lid or other device that neither liquid nor vapor will escape from it at ordinary temperatures.

(10) Crude petroleum shall mean hydrocarbon mixtures that have a flash point below 150°F and which have not been processed in a refinery.

(11) Distillery shall mean a plant or that portion of a plant where flammable or combustible liquids produced by fermentation are concentrated, and where the concentrated products may also be mixed, stored, or packaged.

(12) Fire area shall mean an area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour.

(13) Fire resistance or fire resistive construction shall mean construction to resist the spread of fire.

(14) Flammable aerosol shall mean an aerosol which is required to be labeled "Flammable" under the Federal Hazardous Substances Labeling Act (15 U.S.C. 1261). For the purposes of WAC 296-24-33009, such aerosols are considered Class IA liquids.

(15) "Flashpoint" means the minimum temperature at which a liquid gives off vapor within a test vessel in sufficient concentration to form an ignitable mixture with air near the surface of the liquid, and shall be determined as follows:

(a) For a liquid which has a viscosity of less than 45 SUS at 100°F (37.8°C), does not contain suspended solids, and does not have a tendency to form a surface film while under test, the procedure specified in the Standard Method of Test for Flashpoint by Tag Closed Tester (ASTM D-56-70) shall be used.

(b) For a liquid which has a viscosity of 45 SUS or more at 100°F (37.8°C), or contains suspended solids, or has a tendency to form a surface film while under test, the Standard Method of Test for Flashpoint by Pensky-Martens Closed Tester (ASTM D-93-71) shall be used, except that the methods specified in Note 1 to section 1.1 of ASTM D-93-71 may be used for the respective materials specified in the note.

(c) For a liquid that is a mixture of compounds that have different volatilities and flashpoints, its flashpoint shall be determined by using the procedure specified in (15)(a) or (b) of this section on the liquid in the form it is shipped. If the flashpoint, as determined by this test, is 100°F (37.8°C) or higher, an additional flashpoint determination shall be run on a sample of the liquid evaporated to 90 percent of its original volume, and the lower value of the two tests shall be considered the flashpoint of the material.

(d) Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified in this section.

(16) Hotel shall mean buildings or groups of buildings under the same management in which there are sleeping accommodations for hire primarily used by transients who are lodged with or without meals including but not limited to inns, clubs, motels, and apartment hotels.

(17) Institutional occupancy shall mean the occupancy or use of a building or structure or any portion thereof by persons harbored or detained to receive medical, charitable or other care or treatment, or by persons involuntarily detained.

(18) Liquid shall mean, for the purpose of these standards, any material which has a fluidity greater than that of 300 penetration asphalt when tested in accordance with ASTM Test for Penetration for Bituminous Materials, D-5-65. When not otherwise identified, the term liquid shall include both flammable and combustible liquids.

(19) "Combustible liquid" means any liquid having a flashpoint at or above 100°F. (37.8°C) Combustible liquids shall be divided into two classes as follows:

(a) "Class II liquids" shall include those with flashpoints at or above 100°F (37.8°C) and below 140°F (60°C), except any mixture having components with flashpoints of 200°F (93.3°C) or higher, the volume of which make up 99 percent or more of the total volume of the mixture.

(b) "Class III liquids" shall include those with flashpoints at or above 140°F. (60°C) Class III liquids are subdivided into two subclasses:

(i) "Class IIIA liquids" shall include those with flashpoints at or above 140°F (60°C) and below 200°F (93.3°C) except any mixture having components with flashpoints of 200°F (93.3°C) or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

(ii) "Class IIIB liquids" shall include those with flashpoints at or above 200°F. (93.3°C) This section does not cover Class IIIB liquids. Where the term "Class III liquids" is used in this section, it shall mean only Class IIIA liquids.

(c) When a combustible liquid is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for the next lower class of liquids.

(20) "Flammable liquid" means any liquid having a flashpoint below 100°F, (37.8°C), except any mixture having components with flashpoints of 100°F, (37.8°C) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids shall be known as Class I liquids. Class I liquids are divided into three classes as follows:

(a) Class IA shall include liquids having flashpoints below 73°F (22.8°C) and having a boiling point below 100°F. (37.8°C)

(b) Class IB shall include liquids having flashpoints below 73°F (22.8°C) and having a boiling point at or above 100°F. (37.8°C)

(c) Class IC shall include liquids having flashpoints at or above 73°F (22.8°C) and below 100°F. (37.8°C)

(21) Unstable (reactive) liquid shall mean a liquid which in the pure state or as commercially produced or transported will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

(22) Low-pressure tank shall mean a storage tank which has been designed to operate at pressures above 0.5 p.s.i.g. but not more than 15 p.s.i.g.

(23) Marine service station shall mean that portion of a property where flammable or combustible liquids used as fuels are stored and dispensed from fixed equipment on shore, piers, wharves, or floating docks into the fuel tanks or self-propelled craft, and shall include all facilities used in connection therewith.

(24) Mercantile occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the displaying, selling, or buying of goods, wares, or merchandise.

(25) Office occupancy shall mean the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

(26) Portable tank shall mean a closed container having a liquid capacity over 60 U.S. gallons and not intended for fixed installation.

(27) Pressure vessel shall mean a storage tank or vessel which has been designed to operate at pressures above 15 p.s.i.g.

(28) Protection for exposure shall mean adequate fire protection for structures on property adjacent to tanks, where there are employees of the establishment.

(29) Refinery shall mean a plant in which flammable or combustible liquids are produced on a commercial scale from crude petroleum, natural gasoline, or other hydrocarbon sources.

(30) Safety can shall mean an approved container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

(31) Vapor pressure shall mean the pressure, measured in pounds per square inch (absolute) exerted by a volatile liquid as determined by the "Standard Method of Test for Vapor Pressure of Petroleum Products (Reid Method)," American Society for Testing and Materials ASTM D323-68.

(32) Ventilation as specified in these standards is for the prevention of fire and explosion. It is considered adequate if it is sufficient to prevent accumulation of significant quantities of vapor-air mixtures in concentration over one-fourth of the lower flammable limit.

(33) Storage: Flammable or combustible liquids shall be stored in a tank or in a container that complies with WAC 296-24-33009(2).

(34) Barrel shall mean a volume of 42 U.S. gallons.

(35) Container shall mean any can, barrel, or drum.

(36) Approved unless otherwise indicated, approved, or listed by at least one of the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp.

(37) Listed see "approved" in WAC 296-24-33001(36).

(38) "SUS" means Saybolt Universal Seconds as determined by the Standard Method of Test for Saybolt Viscosity (ASTM D-88-56), and may be determined by use of the SUS conversion tables specified in ASTM Method D2161-66 following determination of viscosity in accordance with the procedures specified in the Standard Method of Test for Viscosity of Transparent and Opaque Liquids (ASTM D445-65).

(39) "Viscous" means a viscosity of 45 SUS or more.

Note: The volatility of liquids is increased when artificially heated to temperatures equal to or higher than their flashpoints. When so heated Class II and III liquids shall be subject to the applicable requirements for Class I or II liquids. These standards may also be applied to high flashpoint liquids when so heated even though these same liquids when not heated are outside of its scope.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-33001, filed 3/30/82. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-33001, filed 11/13/80; Order 76-29, § 296-24-33001, filed 9/30/76; Order 76-6, § 296-24-33001, filed 3/1/76; Order 74-27, § 296-24-33001, filed 5/7/74; Order 73-5, § 296-24-33001, filed 5/9/73 and Order 73-4, § 296-24-33001, filed 5/7/73.]

WAC 296-24-33003 Scope. This section applies to the handling, storage, and use of flammable and combustible liquids with a flash point below 200°F. This section does not apply to:

(1) Bulk transportation of flammable and combustible liquids;

(2) Storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment;

(3) Storage of flammable and combustible liquids on farms;

(4) Liquids without flashpoints that may be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons;

(5) Mists, sprays, or foams, except flammable aerosols covered in WAC 296-24-33009; or

(6) Installations made in accordance with requirements of the following standards:

(a) National Fire Protection Association Standard for Drycleaning Plants, NFPA No. 32-1970;

(b) National Fire Protection Association Standard for the Manufacture of Organic Coatings, NFPA No. 35-1970;

(c) National Fire Protection Association Standard for Solvent Extraction Plants, NFPA No. 36-1967; or

(d) National Fire Protection Association Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, NFPA No. 37–1970.

[Order 73–5, § 296–24–33003, filed 5/9/73 and Order 73–4, § 296–24–33003, filed 5/7/73.]

WAC 296–24–33005 Tank storage. (1) Design and construction of tanks.

(a) Materials.

(i) Tanks shall be built of steel except as provided in (1)(a)(ii) through (v) of this section.

(ii) Tanks may be built of materials other than steel for installation underground or if required by the properties of the liquid stored. Tanks located above ground or inside buildings shall be of noncombustible construction.

(iii) Tanks built of materials other than steel shall be designed to specifications embodying principles recognized as good engineering design for the material used.

(iv) Unlined concrete tanks may be used for storing flammable or combustible liquids having a gravity of 40°API or heavier. Concrete tanks with special lining may be used for other services provided the design is in accordance with sound engineering practice.

(v) Tanks may have combustible or noncombustible linings.

(vi) Special engineering consideration shall be required if the specific gravity of the liquid to be stored exceeds that of water or if the tanks are designed to contain flammable or combustible liquids at a liquid temperature below 0°F.

(b) Fabrication.

(i) Tanks may be of any shape or type consistent with sound engineering design.

(ii) Metal tanks shall be welded, riveted, and caulked, brazed, or bolted, or constructed by use of a combination of these methods. Filler metal used in brazing shall be nonferrous metal or an alloy having a melting point above 1000°F and below that of the metal joined.

(c) Atmospheric tanks.

(i) Atmospheric tanks shall be built in accordance with acceptable good standards of design. Atmospheric tanks may be built in accordance with:

(A) Underwriters' Laboratories, Inc., Subjects No. 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, 1968; No. 58, Standards for Steel Underground Tanks for Flammable and COMBUSTIBLE Liquids, Fifth Edition, December 1961; or No. 80, Standard for Steel Inside Tanks for Oil–Burner Fuel, September 1963.

(B) American Petroleum Institute Standards No. 12A, Specification for Oil Storage Tanks with Riveted Shells, Seventh Edition, September 1951, or No. 650, Welded Steel Tanks for Oil Storage, Third Edition, 1966.

(C) American Petroleum Institute Standards No. 12B, Specification for Bolted Production Tanks, Eleventh Edition, May 1958, and Supplement 1, March 1962; No. 12D, Specification for Large Welded Production Tanks, Seventh Edition, August 1957; or No. 12F, Specification for Small Welded Production Tanks, Fifth Edition, March 1961. Tanks built in accordance with these standards shall be used only as production tanks for storage of crude petroleum in oil–producing areas.

(ii) Tanks designed for underground service not exceeding 2,500 gallons capacity may be used aboveground.

(iii) Low–pressure tanks and pressure vessels may be used as atmospheric tanks.

(iv) Atmospheric tanks shall not be used for the storage of a flammable or combustible liquid at a temperature at or above its boiling point.

(d) Low pressure tanks.

(i) The normal operating pressure of the tank shall not exceed the design pressure of the tank.

(ii) Low–pressure tanks shall be built in accordance with acceptable standards of design. Low–pressure tanks may be built in accordance with:

(A) American Petroleum Institute Standard No. 620, Recommended Rules for the Design and Construction of Large, Welded, Low–Pressure Storage Tanks, Third Edition, 1966.

(B) The principles of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessels Code, 1968.

(iii) Atmospheric tanks built according to the Underwriters' Laboratories, Inc., requirements in (1)(c)(i) of this section may be used for operating pressures not exceeding 1 p.s.i.g. and shall be limited to 2.5 p.s.i.g. under emergency venting conditions. Pressure vessels may be used as low–pressure tanks.

(e) Pressure vessels.

(i) The normal operating pressure of the vessel shall not exceed the design pressure of the vessel.

(ii) Pressure vessels shall be built in accordance with the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code, 1968.

(f) Provisions for internal corrosion. When tanks are not designed in accordance with the American Petroleum Institute, American Society of Mechanical Engineers, or the Underwriters' Laboratories, Inc.'s standards, or if corrosion is anticipated beyond that provided for in the design formulas used, additional metal thickness or suitable protective coatings or linings shall be provided to compensate for the corrosion loss expected during the design life of the tank.

(2) Installation of outside aboveground tanks.

(a) Location with respect to property lines and public ways.

(i) Every aboveground tank for the storage of flammable or combustible liquids, except those liquids with boil–over characteristics and unstable liquids, operating at pressures not in excess of 2.5 p.s.i.g. and equipped with emergency venting which will not permit pressures to exceed 2.5 p.s.i.g. shall be located in accordance with Table H–5.

(ii) Every aboveground tank for the storage of flammable or combustible liquids, except those liquids with boil–over characteristics and unstable flammable or combustible liquids, operating at pressures exceeding 2.5 p.s.i.g. or equipped with emergency venting which will

permit pressures to exceed 2.5 p.s.i.g. shall be located in accordance with Table H–6.

TABLE H–5

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building and shall be not less than 5 feet.
Floating roof	Protection for exposures.	1/2 times diameter of tank but need not exceed 90 ft.	1/6 times diameter of tank but need not exceed 30 ft.
	None	Diameter of tank but need not exceed 175 ft.	1/6 times diameter of tank but need not exceed 30 ft.
Vertical with weak roof to shell seam	Approved foam or inerting system on the tank.	1/2 times diameter of tank but need not exceed 90 ft. and shall not be less than 5 ft.	1/6 times diameter of tank but need not exceed 30 ft.
	Protection for exposures.	Diameter of tank but, need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	None	2 times diameter of tank but need not exceed 350 ft.	1/3 times diameter of tank but need not exceed 60 ft.
Horizontal and vertical, with emergency relief venting to limit pressures to 2.5 p.s.i.g.	Approved inerting system on the tank or approved foam system on vertical tanks.	1/2 times Table H–9 but shall not be less than 5 ft.	1/2 times Table H–9.
	Protection for exposures.	Table H–9	Table H–9
	None	2 times table	Table H–9

TABLE H–6

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Any type	Protection for exposures.	1 1/2 times Table H–9 but shall not be less than 25 ft.	1 1/2 times Table H–9 but shall not be less than 25 ft.
	None	3 times Table H–9 but shall not be less than 50 ft.	1 1/2 times Table H–9 but shall not be less than 25 ft.

(iii) Every aboveground tank for the storage of flammable or combustible liquids with boil–over characteristics shall be located in accordance with Table H–7.

TABLE H–7

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Floating roof	Protection for exposures.	Diameter of tank but need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	None	2 times diameter of tank but need not exceed 350 ft.	1/3 times diameter of tank but need not exceed 60 ft.
Fixed roof	Approved foam or inerting system.	Diameter of tank but need not exceed 175 ft.	1/3 times diameter of tank but need not exceed 60 ft.
	Protection for exposures.	2 times diameter of tank but need not exceed 350 ft.	2/3 times diameter of tank but need not exceed 120 ft.
	None	4 times diameter of tank but need not exceed 350 ft.	2/3 times diameter of tank but need not exceed 120 ft.

(iv) Every aboveground tank for the storage of unstable liquids shall be located in accordance with Table H–8.

TABLE H–8

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
Horizontal and vertical tanks with emergency relief venting to permit pressure not in excess of 2.5 p.s.i.g.	Tank protected with any of the following: Approved water spray, approved inerting, approved insulation and refrigeration, approved barricade.	See Table H–9, but the distance may be not less than 25 ft.	Not less than 25 ft.
	Protection for exposures.	2 1/2 times Table H–9 but not less than 50 ft.	Not less than 50 ft.
	None	5 times Table H–9 but not less than 100 ft.	Not less than 100 ft.
Horizontal and vertical tanks with emergency relief venting to permit pressure over 2.5 p.s.i.g.	Tank protected with any one of the following: Approved water spray, approved inerting, approved insulation and	2 times Table H–9 but not less than 50 ft.	Not less than 50 ft.

TABLE H-8

Type of tank	Protection	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
	refrigeration, approved barricade.		
	Protection for exposures.	4 times Table H-9 but not less than 100 ft.	Not less than 100 ft.
	None	8 times Table H-9 but not less than 150 ft.	Not less than 150 ft.

(v) Reference minimum distances for use in Tables H-5 to H-8 inclusive.

TABLE H-9

Capacity tank gallons	Minimum distance in feet from property line which may be built upon, including the opposite side of a public way.	Minimum distance in feet from nearest side of any public way or from nearest important building.
275 or less	5	5
276 to 750	10	5
751 to 12,000	15	5
12,001 to 30,000	20	5
30,001 to 50,000	30	10
50,001 to 100,000	50	15
100,001 to 500,000	80	25
500,001 to 1,000,000	100	35
1,000,001 to 2,000,000	135	45
2,000,001 to 3,000,000	165	55
3,000,001 or more	175	60

(vi) Where end failure or horizontal pressure tanks and vessels may expose property, the tank shall be placed with the longitudinal axis parallel to the nearest important exposure.

(b) Spacing (shell-to-shell) between aboveground tanks.

(i) The distance between any two flammable or combustible liquid storage tanks shall not be less than 3 feet.

(ii) Except as provided in (2)(b)(iii) of this section, the distance between any two adjacent tanks shall not be less than one-sixth the sum of their diameters. When the diameter of one tank is less than one-half the diameter of the adjacent tank, the distance between the two tanks shall not be less than one-half the diameter of the smaller tank.

(iii) Where crude petroleum in conjunction with production facilities are located in noncongested areas and have capacities not exceeding 126,000 gallons (3,000 barrels), the distance between such tanks shall not be less than 3 feet.

(iv) Where unstable flammable or combustible liquids are stored, the distance between such tanks shall not be less than one-half the sum of their diameters.

(v) When tanks are compacted in three or more rows or in an irregular pattern, greater spacing or other means shall be provided so that inside tanks are accessible for firefighting purposes.

(vi) The minimum separation between a liquefied petroleum gas container and a flammable or combustible liquid storage tank shall be 20 feet, except in the case of flammable or combustible liquid tanks operating at pressures exceeding 2.5 p.s.i.g. or equipped with emergency venting which will permit pressures to exceed 2.5 p.s.i.g. in which case the provisions of (2)(b)(i) and (ii) of this section shall apply. Suitable means shall be taken to prevent the accumulation of flammable or combustible liquids under adjacent liquefied petroleum gas containers such as by diversion curbs or grading. When flammable or combustible liquid storage tanks are within a diked area, the liquefied petroleum gas containers shall be outside the diked area and at least 10 feet away from the centerline of the wall of the diked area. The foregoing provisions shall not apply when liquefied petroleum gas containers of 125 gallons or less capacity are installed adjacent to fuel oil supply tanks of 550 gallons or less capacity.

(c) Location of outside aboveground tanks with respect to important buildings on same property. Every outside aboveground tank shall be separated from important buildings on the same property by distances not less than those specified in (2)(a)(i), (ii), (iii) and (iv) of this section, whichever is applicable. The appropriate distance column in Tables H-5, H-6, H-7, H-8, or H-9, that shall be used shall be the one reading: "Minimum distance in feet from nearest side of any public way or from nearest important building."

(d) Normal venting for aboveground tanks. (i) Atmospheric storage tanks shall be adequately vented to prevent the development of vacuum or pressure sufficient to distort the roof of a cone roof tank or exceed the design pressure in the case of other atmospheric tanks, as a result of filling or emptying, and atmospheric temperature changes.

(ii) Normal vents shall be sized either in accordance with: (A) The American Petroleum Institute Standard 2000 (1968), Venting Atmospheric and Low-Pressure Storage Tanks; or (B), other accepted standard; or (C) shall be at least as large as the filling or withdrawal connection, whichever is larger but in no case less than 1 1/4 inch nominal inside diameter.

(iii) Low-pressure tanks and pressure vessels shall be adequately vented to prevent development of pressure or vacuum, as a result of filling or emptying and atmospheric temperature changes, from exceeding the design pressure of the tank or vessel. Protection shall also be provided to prevent over-pressure from any pump discharging into the tank or vessel when the pump discharge pressure can exceed the design pressure of the tank or vessel.

(iv) If any tank or pressure vessel has more than one fill or withdrawal connection and simultaneous filling or

withdrawal can be made, the vent size shall be based on the maximum anticipated simultaneous flow.

(v) Unless the vent is designed to limit the internal pressure 2.5 p.s.i. or less, the outlet of vents and vent drains shall be arranged to discharge in such a manner as to prevent localized overheating of any part of the tank in the event vapors from such vents are ignited.

(vi) Tanks and pressure vessels storing Class IA liquids shall be equipped with venting devices which shall be normally closed except when venting to pressures or vacuum conditions. Tanks and pressure vessels storing Class IB and IC liquids shall be equipped with venting devices which shall be normally closed except when venting under pressure or vacuum conditions, or with approved flame arresters.

Exemption: Tanks of 3,000 bbls. capacity or less containing crude petroleum in crude-producing areas; and, outside aboveground atmospheric tanks under 1,000 gallons capacity containing other than Class IA flammable liquids may have open vents. (See (2)(f)(ii) of this section.)

(vii) Flame arresters or venting devices required in (2)(e)(vi) of this section may be omitted for Class IB and IC liquids where conditions are such that their use may, in case of obstruction, result in tank damage.

(e) Emergency relief venting for fire exposure for aboveground tanks.

(i) Every aboveground storage tank shall have some form of construction or device that will relieve excessive internal pressure caused by exposure fires.

(ii) In a vertical tank the construction referred to in (2)(e)(i) of this section may take the form of a floating roof, lifter roof, a weak roof-to-shell seam, or other approved pressure relieving construction. The weak roof-to-shell seam shall be constructed to fail preferential to any other seam.

(iii) Where entire dependence for emergency relief is placed upon pressure relieving devices, the total venting capacity of both normal and emergency vents shall be enough to prevent rupture of the shell or bottom of the tank if vertical, or of the shell or heads if horizontal. If unstable liquids are stored, the effects of heat or gas resulting from polymerization, decomposition, condensation, or self-reactivity shall be taken into account. The total capacity of both normal and emergency venting devices shall be not less than that derived from Table H-10 except as provided in (2)(e)(v) and (vi) of this section. Such device may be a self-closing manhole cover, or one using long bolts that permit the cover to lift under internal pressure, or an additional or larger relief valve or valves. The wetted area of the tank shall be calculated on the basis of 55 percent of the total exposed area of a sphere or spheriod, 75 percent of the total exposed area of a horizontal tank and the first 30 feet above grade of the exposed shell area of a vertical tank.

TABLE 10

WETTED AREA VERSUS CUBIC FEET FREE AIR PER HOUR
(14.7 psia and 60°F)

Square feet	CFH	Square feet	CFH	Square feet	CFH
20	21,100	200	211,000	1,000	524,000
30	31,600	250	239,000	1,200	557,000
40	42,100	300	265,000	1,400	587,000
50	52,700	350	288,000	1,600	614,000
60	63,200	400	312,000	1,800	639,000
70	73,700	500	354,000	2,000	662,000
80	84,200	600	392,000	2,400	704,000
90	94,800	700	428,000	2,800	742,000
100	105,000	800	462,000	and	
120	126,000	900	493,000	over	
140	147,000	1,000	524,000		
160	168,000				
180	190,000				
200	211,000				

(iv) For tanks and storage vessels designed for pressure over 1 p.s.i.g., the total rate of venting shall be determined in accordance with Table H-10, except that when the exposed wetted area of the surface is greater than 2,800 square feet, the total rate of venting shall be calculated by the following formula:

$$CFH = 1{,}107A^{0.82}$$

Where:

CFH = Venting requirement, in cubic feet of free air per hour.

A = Exposed wetted surface, in square feet.

Note: The foregoing formula is based on $Q = 21{,}000A^{0.82}$.

(v) The total emergency relief venting capacity for any specific stable liquid may be determined by the following formula:

Cubic feet of free air per hour = V

$$V = \frac{1337}{L\,M}$$

V = Cubic feet of free air per hour from Table H-10.

L = Latent heat of vaporization of specific liquid in B.t.u. per pound.

M = Molecular weight of specific liquids.

(vi) The required airflow rate of (2)(e)(iii) or (v) of this section may be multiplied by the appropriate factor listed in the following schedule when protection is provided as indicated. Only one factor may be used for any one tank.

0.5 for drainage in accordance with (2)(g)(ii) of this section for tanks over 200 square feet of wetted area.

0.3 for approved water spray.

0.3 for approved insulation.

0.15 for approved water spray with approved insulation.

(vii) The outlet of all vents and vent drains on tanks equipped with emergency venting to permit pressures exceeding 2.5 p.s.i.g. shall be arranged to discharge in such a way as to prevent localized overheating of any part of the tank, in the event vapors from such vents are ignited.

(viii) Each commercial tank venting device shall have stamped on it the opening pressure, the pressure at which the valve reaches the full open position, and the flow capacity at the latter pressure, expressed in cubic feet per hour of air at 60°F and at a pressure of 14.7 p.s.i.a.

(ix) The flow capacity of tank venting devices 12 inches and smaller in nominal pipe size shall be determined by actual test of each type and size of vent. These flow tests may be conducted by the manufacturer if certified by a qualified impartial observer, or may be conducted by an outside agency. The flow capacity of tank venting devices larger than 12 inches nominal pipe size, including manhole covers with long bolts or equivalent, may be calculated provided that the opening pressure is actually measured, the rating pressure and corresponding free orifice area are stated, the word "calculated" appears on the nameplate, and the computation is based on a flow coefficient of 0.5 applied to the rated orifice area.

(f) Vent piping for aboveground tanks.

(i) Vent piping shall be constructed in accordance with WAC 296-24-33007 of this section.

(ii) Where vent pipe outlets for tanks storing Class I liquids are adjacent to buildings or public ways, they shall be located so that the vapors are released at a safe point outside of buildings and not less than 12 feet above the adjacent ground level. In order to aid their dispersion, vapors shall be discharged upward or horizontally away from closely adjacent walls. Vent outlets shall be located so that flammable vapors will not be trapped by eaves or other obstructions and shall be at least five feet from building openings.

(iii) When tank vent piping is manifolded, pipe sizes shall be such as to discharge within the pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are subject to the same fire exposure.

(g) Drainage, dikes, and walls for aboveground tanks.

(i) Drainage and diked areas. The area surrounding a tank or a group of tanks shall be provided with drainage as in (2)(g)(ii) of this section, or shall be diked as provided in (2)(g)(iii), to prevent accidental discharge of liquid from endangering adjoining property or reaching waterways.

(ii) Drainage. Where protection of adjoining property or waterways is by means of a natural or manmade drainage system, such systems shall comply with the following:

(A) A slope of not less than 1 percent away from the tank toward the drainage system shall be provided.

(B) The drainage system shall terminate in vacant land or other area or in an impounding basin having a capacity not smaller than that of the largest tank served. This termination area and the route of the drainage system shall be so located that, if the flammable or combustible liquids in the drainage system are ignited, the fire will not seriously expose tanks or adjoining property.

(C) The drainage system, including automatic drainage pumps, shall not discharge to adjoining property, natural water courses, public sewers, or public drains unless the discharge of flammable or combustible liquids would not constitute a hazard, or the system is so designed that it will not permit flammable or combustible liquids to be released.

(iii) Diked areas. Where protection of adjoining property or waterways is accomplished by retaining the liquid around the tank by means of a dike, the volume of the diked area shall comply with the following requirements:

(A) Except as provided in (2)(g)(iii)(B) of this section, the volumetric capacity of the diked area shall not be less than the greatest amount of liquid that can be released from the largest tank within the diked area, assuming a full tank. The capacity of the diked area enclosing more than one tank shall be calculated by deducting the volume of the tanks other than the largest tank below the height of the dike.

(B) For a tank or group of tanks with fixed roofs containing crude petroleum with boilover characteristics, the volumetric capacity of the diked area shall be not less than the capacity of the largest tank served by the enclosure, assuming a full tank. The capacity of the diked enclosure shall be calculated by deducting the volume below the height of the dike of all tanks within the enclosure.

(C) Walls of the diked area shall be of earth, steel, concrete or solid masonry designed to be liquidtight and to withstand a full hydrostatic head. Earthen walls 3 feet or more in height shall have a flat section at the top not less than 2 feet wide. The slope of an earthen wall shall be consistent with the angle of repose of the material of which the wall is constructed.

(D) The walls of the diked area shall be restricted to an average height of 6 feet above interior grade.

(E) Where provision is made for draining water from diked areas, drainage shall be provided at a uniform slope of not less than 1 percent away from tanks toward a sump, drainbox, or other safe means of disposal located at the greatest practical distance from the tank. Such drains shall normally be controlled in a manner so as to prevent flammable or combustible liquids from entering natural water courses, public sewers, or public drains, if their presence would constitute a hazard. Control of drainage shall be accessible under fire conditions.

(F) No loose combustible material, empty or full drum or barrel, shall be permitted within the diked area.

(G) Each diked area containing two or more tanks shall be subdivided preferably by drainage channels or at least by intermediate curbs in order to prevent spills from endangering adjacent tanks within the diked area as follows:

(aa) When storing normally stable liquids in vertical cone roof tanks constructed with weak roof-to-shell

seam or approved floating roof tanks or when storing crude petroleum in producing areas in any type of tank, one subdivision for each tank in excess of 10,000 bbls. and one subdivision for each group of tanks (no tank exceeding 10,000 bbls. capacity) having an aggregate capacity not exceeding 15,000 bbls.

(bb) When storing normally stable flammable or combustible liquids in tanks not covered in (aa) of this section, one subdivision for each tank in excess of 100,000 gallons (2,500 bbls.) and one subdivision for each group of tanks (no tank exceeding 100,000 gallons capacity) having an aggregate capacity not exceeding 150,000 gallons (3,570 bbls.).

(cc) When storing unstable liquids in any type of tank, one subdivision for each tank except that tanks installed in accordance with the drainage requirements of NFPA 15–1969, Standard for Water Spray Fixed Systems for Fire Protection shall require no additional subdivision.

(dd) The drainage channels or intermediate curbs shall be located between tanks so as to take full advantage of the available space with due regard for the individual tank capacities. Intermediate curbs, where used, shall be not less than 18 inches in height.

(h) Tank openings other than vents for aboveground tanks.

(i) Connections for all tank openings shall be vapor-tight and liquid tight. Vents are covered in (2)(d) through (f) of this section.

(ii) Each connection to an aboveground tank through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank. Such valves, when external, and their connections to the tank shall be of steel except when the chemical characteristics of the liquid stored are incompatible with steel. When materials other than steel are necessary, they shall be suitable for the pressures, structural stresses, and temperatures involved, including fire exposures.

(iii) Each connection below the liquid level through which liquid does not normally flow shall be provided with a liquid tight closure. This may be a valve, plug, or blind, or a combination of these.

(iv) Openings for gaging shall be provided with a vapor tight cap or cover.

(v) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity. A fill pipe entering the top of a tank shall terminate within 6 inches of the bottom of the tank and shall be installed to avoid excessive vibration.

(vi) Filling and emptying connections which are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. Such connection shall be closed and liquidtight when not in use. The connection shall be properly identified.

(3) Installation of underground tanks.

(a) Location. Excavation for underground storage tanks shall be made with due care to avoid undermining of foundations of existing structures. Underground tanks or tanks under buildings shall be so located with respect to existing building foundations and supports that the loads carried by the latter cannot be transmitted to the tank. The distance from any part of a tank storing Class I liquids to the nearest wall of any basement or pit shall be not less than 1 foot, and to any property line that may be built upon, not less than 3 feet. The distance from any part of a tank storing Class II or Class III liquids to the nearest wall of any basement, pit or property line shall not be less than 1 foot.

(b) Depth and cover. Underground tanks shall be set on firm foundations and surrounded with at least 6 inches of noncorrosive, inert materials such as clean sand, earth, or gravel well tamped in place. The tank shall be placed in the hole with care since dropping or rolling the tank into the hole can break a weld, puncture or damage the tank, or scrape off the protective coating of coated tanks. Tanks shall be covered with a minimum of 2 feet of earth or shall be covered with not less than 1 foot of earth, on top of which shall be placed a slab of reinforced concrete not less than 4 inches thick. When underground tanks are, or are likely to be, subject to traffic, they shall be protected against damage from vehicles passing over them by at least 3 feet of earth cover, or 18 inches of well–tamped earth, plus 6 inches of reinforced concrete or 8 inches of asphaltic concrete. When asphaltic or reinforced concrete paving is used as part of the protection, it shall extend at least 1 foot horizontally beyond the outline of the tank in all directions.

(c) Corrosion protection. Corrosion protection for the tank and its piping shall be provided by one or more of the following methods:

(i) Use of protective coatings or wrappings;

(ii) Cathodic protection; or,

(iii) Corrosion resistant materials of construction.

(d) Vents.

(i) Location and arrangement of vents for Class I liquids. Vent pipes from tanks storing Class I liquids shall be so located that the discharge point is outside of buildings, higher than the fill pipe opening, and not less than 12 feet above the adjacent ground level. Vent pipes shall discharge only upward in order to disperse vapors. Vent pipes 2 inches or less in nominal inside diameter shall not be obstructed by devices that will cause excessive back pressure. Vent pipe outlets shall be so located that flammable vapors will not enter building openings, or be trapped under eaves or other obstructions. If the vent pipe is less than 10 feet in length, or greater than 2 inches in nominal inside diameter, the outlet shall be provided with a vacuum and pressure relief device or there shall be an approved flame arrester located in the vent line at the outlet or within the approved distance from the outlet.

(ii) Size of vents. Each tank shall be vented through piping adequate in size to prevent blow–back of vapor or liquid at the fill opening while the tank is being filled. Vent pipes shall be not less than 1 1/4 inch nominal inside diameter.

TABLE H-11

VENT LINE DIAMETERS

Maximum flow GPM	Pipe length*		
	50 feet	100 feet	200 feet
	Inches	Inches	Inches
100	1 1/4	1 1/4	1 1/4
200	1 1/4	1 1/4	1 1/4
300	1 1/4	1 1/4	1 1/2
400	1 1/4	1 1/2	2
500	1 1/2	1 1/2	2
600	1 1/2	2	2
700	2	2	2
800	2	2	3
900	2	2	3
1,000	2	2	3

*Vent lines of 50 ft., 100 ft., and 200 ft. of pipe plus 7 ells.

(iii) Location and arrangement of vents for Class II or Class III liquids. Vent pipes from tanks storing Class II or Class III flammable liquids shall terminate outside of the building and higher than the fill pipe opening. Vent outlets shall be above normal snow level. They may be fitted with return bends, coarse screens or other devices to minimize ingress of foreign material.

(iv) Vent piping shall be constructed in accordance with WAC 296-24-33007. Vent pipes shall be so laid as to drain toward the tank without sags or traps in which liquid can collect. They shall be located so that they will not be subjected to physical damage. The tank end of the vent pipe shall enter the tank through the top.

(v) When tank vent piping is manifolded, pipe sizes shall be such as to discharge, within the pressure limitations of the system, the vapors they may be required to handle when manifolded tanks are filled simultaneously.

(e) Tank openings other than vents.

(i) Connections for all tank openings shall be vapor or liquid tight.

(ii) Openings for manual gaging, if independent of the fill pipe, shall be provided with a liquid-tight cap or cover. If inside a building, each such opening shall be protected against liquid overflow and possible vapor release by means of a spring loaded check valve or other approved device.

(iii) Fill and discharge lines shall enter tanks only through the top. Fill lines shall be sloped toward the tank.

(iv) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity by terminating within 6 inches of the bottom of the tank.

(v) Filling and emptying connections which are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. Such connection shall be closed and liquid-tight when not in use. The connection shall be properly identified.

(4) Installation of tanks inside of buildings.

(a) Location. Tanks shall not be permitted inside of buildings except as provided in WAC 296-24-33011 and 296-24-33015 through 296-24-33019.

(b) Vents. Vents for tanks inside of buildings shall be as provided in (2)(d), (e), (f)(ii) and (3)(d) of this section, except that emergency venting by the use of weak roof seams on tanks shall not be permitted. Vents shall discharge vapors outside the buildings.

(c) Vent piping. Vent piping shall be constructed in accordance with WAC 296-24-33007.

(d) Tank openings other than vents.

(i) Connections for all tank openings shall be vapor or liquidtight. Vents are covered in (4)(b) of this section.

(ii) Each connection to a tank inside of buildings through which liquid can normally flow shall be provided with an internal or an external valve located as close as practical to the shell of the tank. Such valves, when external, and their connections to the tank shall be of steel except when the chemical characteristics of the liquid stored are incompatible with steel. When materials other than steel are necessary, they shall be suitable for the pressures, structural stresses, and temperatures involved, including fire exposures.

(iii) Flammable or combustible liquid tanks located inside of buildings, except in one-story buildings designed and protected for flammable or combustible liquid storage, shall be provided with an automatic-closing heat-actuated valve on each withdrawal connection below the liquid level, except for connections used for emergency disposal, to prevent continued flow in the event of fire in the vicinity of the tank. This function may be incorporated in the valve required in (4)(d)(ii) of this section, and if a separate valve, shall be located adjacent to the valve required in (4)(d)(ii) of this section.

(iv) Openings for manual gaging, if independent of the fill pipe (see (4)(d)(vi) of this section), shall be provided with a vaportight cap or cover. Each such opening shall be protected against liquid overflow and possible vapor release by means of a spring loaded check valve or other approved device.

(v) For Class IB and Class IC liquids other than crude oils, gasolines, and asphalts, the fill pipe shall be so designed and installed as to minimize the possibility of generating static electricity by terminating within 6 inches of the bottom of the tank.

(vi) The fill pipe inside of the tank shall be installed to avoid excessive vibration of the pipe.

(vii) The inlet of the fill pipe shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. The inlet of the fill pipe shall be closed and liquidtight when not in use. The fill connection shall be properly identified.

(viii) Tanks inside buildings shall be equipped with a device, or other means shall be provided, to prevent overflow into the building.

(5) Supports, foundations, and anchorage for all tank locations.

(a) General. Tank supports shall be installed on firm foundations. Tank supports shall be of concrete, masonry, or protected steel. Single wood timber supports (not cribbing) laid horizontally may be used for outside aboveground tanks if not more than 12 inches high at their lowest point.

(b) Fire resistance. Steel supports or exposed piling shall be protected by materials having a fire resistance rating of not less than 2 hours, except that steel saddles need not be protected if less than 12 inches high at their lowest point. Water spray protection or its equivalent may be used in lieu of fire-resistive materials to protect supports.

(c) Spheres. The design of the supporting structure for tanks such as spheres shall receive special engineering consideration.

(d) Load distribution. Every tank shall be so supported as to prevent the excessive concentration of loads on the supporting portion of the shell.

(e) Foundations. Tanks shall rest on the ground or on foundations made of concrete, masonry, piling, or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.

(f) Flood areas. Where a tank is located in an area that may be subjected to flooding, the applicable precautions outlined in (5)(f) of this section shall be observed.

(i) No aboveground vertical storage tank containing a flammable or combustible liquid shall be located so that the allowable liquid level within the tank is below the established maximum flood stage, unless the tank is provided with a guiding structure such as described in (5)(f)(xiii), (xiv) and (xv) of this section.

(ii) Independent water supply facilities shall be provided at locations where there is no ample and dependable public water supply available for loading partially empty tanks with water.

(iii) In addition to the preceding requirements, each tank so located that more than 70 percent, but less than 100 percent, of its allowable liquid storage capacity will be submerged at the established maximum flood stage, shall be safeguarded by one of the following methods: Tank shall be raised, or its height shall be increased, until its top extends above the maximum flood stage a distance equivalent to 30 percent or more of its allowable liquid storage capacity: *Provided, however,* That the submerged part of the tank shall not exceed two and one-half times the diameter. Or, as an alternative to the foregoing, adequate noncombustible structural guides, designed to permit the tank to float vertically without loss of product, shall be provided.

(iv) Each horizontal tank so located that more than 70 percent of its storage capacity will be submerged at the established flood stage, shall be anchored, attached to a foundation of concrete or of steel and concrete, of sufficient weight to provide adequate load for the tank when filled with flammable or combustible liquid and submerged by flood waters to the established flood stage, or adequately secured by other means.

(v) Spherical and spheroidal tanks shall be protected by applicable methods as specified for either vertical or horizontal tanks.

(vi) At locations where there is no ample and dependable water supply, or where filling of underground tanks with liquid is impracticable because of the character of their contents, their use, or for other reasons, each tank shall be safeguarded against movement when empty and submerged by high ground water or flood waters by anchoring, weighting with concrete or other approved solid loading material, or securing by other means. Each such tank shall be so constructed and installed that it will safely resist external pressures due to high ground water or flood waters.

(vii) At locations where there is an ample and dependable water supply available, underground tanks containing flammable or combustible liquids, so installed that more than 70 percent of their storage capacity will be submerged at the maximum flood stage, shall be so anchored, weighted, or secured by other means, as to prevent movement of such tanks when filled with flammable or combustible liquids, and submerged by flood waters to the established flood stage.

(viii) Pipe connections below the allowable liquid level in a tank shall be provided with valves or cocks located as closely as practicable to the tank shell. Such valves and their connections to tanks shall be of steel or other material suitable for use with the liquid being stored. Cast iron shall not be used.

(ix) At locations where an independent water supply is required, it shall be entirely independent of public power and water supply. Independent source of water shall be available when flood waters reach a level not less than 10 feet below the bottom of the lowest tank on a property.

(x) The self-contained power and pumping unit shall be so located or so designed that pumping into tanks may be carried on continuously throughout the rise in flood waters from a level 10 feet below the lowest tank to the level of the potential flood stage.

(xi) Capacity of the pumping unit shall be such that the rate of rise of water in all tanks shall be equivalent to the established potential average rate of rise of flood waters at any stage.

(xii) Each independent pumping unit shall be tested periodically to insure that it is in satisfactory operating condition.

(xiii) Structural guides for holding floating tanks above their foundations shall be so designed that there will be no resistance to the free rise of a tank, and shall be constructed of noncombustible material.

(xiv) The strength of the structure shall be adequate to resist lateral movement of a tank subject to a horizontal force in any direction equivalent to not less than 25 pounds per square foot acting on the projected vertical cross-sectional area of the tank.

(xv) Where tanks are situated on exposed points or bends in a shoreline where swift currents in flood waters will be present, the structures shall be designed to withstand a unit force of not less than 50 pounds per square foot.

(xvi) The filling of a tank to be protected by water loading shall be started as soon as flood waters reach a dangerous flood stage. The rate of filling shall be at least equal to the rate of rise of the floodwaters (or the established average potential rate of rise).

(xvii) Sufficient fuel to operate the water pumps shall be available at all times to insure adequate power to fill all tankage with water.

(xviii) All valves on connecting pipelines shall be closed and locked in closed position when water loading has been completed.

(xix) Where structural guides are provided for the protection of floating tanks, all rigid connections between tanks and pipelines shall be disconnected and blanked off or binded before the floodwaters reach the bottom of the tank, unless control valves and their connections to the tank are of a type designed to prevent breakage between the valve and the tank shell.

(xx) All valves attached to tanks other than those used in connection with water loading operations shall be closed and locked.

(xxi) If a tank is equipped with a swing line, the swing pipe shall be raised to and secured at its highest position.

(xxii) Inspections. The director or his designated representative shall make periodic inspections of all plants where the storage of flammable or combustible liquids is such as to require compliance with the foregoing requirements, in order to assure the following:

(A) That all flammable or combustible liquid storage tanks are in compliance with these requirements and so maintained.

(B) That detailed printed instructions of what to do in flood emergencies are properly posted.

(C) That station operators and other employees depended upon to carry out such instructions are thoroughly informed as to the location and operation of such valves and other equipment necessary to effect these requirements.

(g) Earthquake areas. In areas subject to earthquakes, the tank supports and connections shall be designed to resist damage as a result of such shocks.

(6) Sources of ignition. In locations where flammable vapors may be present, precautions shall be taken to prevent ignition by eliminating or controlling sources of ignition. Sources of ignition may include open flames, lightning, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, and mechanical), spontaneous ignition, chemical and physical-chemical reactions, and radiant heat.

(7) Testing.

(a) General. All tanks, whether shop built or field erected, shall be strength tested before they are placed in service in accordance with the applicable sections of the code under which they were built. The American Society of Mechanical Engineers (ASME) code stamp. American Petroleum Institute (API) monogram, or the label of the Underwriters' Laboratories, Inc., on a tank shall be evidence of compliance with this strength test. Tanks not marked in accordance with the above codes shall be strength tested before they are placed in service in accordance with good engineering principles and reference shall be made to the sections on testing in the codes listed in (l)(c)(i), (d)(ii) or (e)(ii) of this section.

(b) Strength. When the vertical length of the fill and vent pipes is such that when filled with liquid the static head imposed upon the bottom of the tank exceeds 10 pounds per square inch, the tank and related piping shall be tested hydrostatically to a pressure equal to the static head thus imposed.

(c) Tightness. In addition to the strength test called for in (7)(a) and (b), all tanks and connections shall be tested for tightness. Except for underground tanks, this tightness test shall be made at operating pressure with air, inert gas, or water prior to placing the tank in service. In the case of field-erected tanks the strength test may be considered to be the test for tank tightness. Underground tanks and piping, before being covered, enclosed, or placed in use, shall be tested for tightness hydrostatically, or with air pressure at not less than 3 pounds per square inch and not more than 5 pounds per square inch.

(d) Repairs. All leaks or deformations shall be corrected in an acceptable manner before the tank is placed in service. Mechanical caulking is not permitted for correcting leaks in welded tanks except pinhole leaks in the roof.

(e) Derated operations. Tanks to be operated at pressures below their design pressure may be tested by the applicable provisions of (7)(a) or (b) based upon the pressure developed under full emergency venting of the tank.

[Order 76-6, § 296-24-33005, filed 3/1/76; Order 73-5, § 296-24-33005, filed 5/9/73 and Order 73-4, § 296-24-33005, filed 5/7/73.]

WAC 296-24-33007 Piping, valves, and fittings. (1) General.

(a) Design. The design (including selection of materials) fabrication, assembly, test, and inspection of piping systems containing flammable or combustible liquids shall be suitable for the expected working pressures and structural stresses. Conformity with the applicable provisions of Pressure Piping, ANSI B31-1967 series and the provisions of this section, shall be considered prima facie evidence of compliance with the foregoing provisions.

(b) Exceptions. This section does not apply to any of the following:

(i) Tubing or casing on any oil or gas wells and any piping connected directly thereto.

(ii) Motor vehicle, aircraft, boat, or portable or stationary engines.

(iii) Piping within the scope of any applicable boiler and pressures vessel code.

(c) Definitions. As used in this section, piping systems consist of pipe, tubing flanges, bolting, gaskets, valves, fittings, the pressure containing parts of other components such as expansion joints and strainers, and devices which serve such purposes as mixing, separating, snubbing, distributing, metering, or controlling flow.

(2) Materials for piping, valves, and fittings.

(a) Required materials. Materials for piping, valves, or fittings shall be steel, nodular iron or malleable iron, except as provided in subsections (b), (c) and (d).

(b) Exceptions. Materials other than steel, nodular iron, or malleable iron may be used underground, or if required by the properties of the flammable or combustible liquid handled. Material other than steel, nodular iron, or malleable iron shall be designed to specifications embodying principles recognized as good engineering practices for the material used.

(c) Linings. Piping, valves, and fittings may have combustible or noncombustible linings.

(d) Low-melting materials. When low-melting point materials such as aluminum and brass or materials that soften on fire exposure such as plastics, or nonductile materials such as cast iron, are necessary, special consideration shall be given to their behavior on fire exposure. If such materials are used in aboveground piping systems or inside buildings, they shall be suitably protected against fire exposure or so located that any spill resulting from the failure of these materials could not unduly expose persons, important buildings or structures or can be readily controlled by remote valves.

(3) Pipe joints. Joints shall be made liquid tight. Welded or screwed joints or approved connectors shall be used. Threaded joints and connections shall be made up tight with a suitable lubricant or piping compound. Pipe joints dependent upon the friction characteristics of combustible materials for mechanical continuity of piping shall not be used inside buildings. They may be used outside of buildings above or below ground. If used aboveground, the piping shall either be secured to prevent disengagement at the fitting or the piping system shall be so designed that any spill resulting from such disengagement could not unduly expose persons, important buildings or structures, and could be readily controlled by remote valves.

(4) Supports. Piping systems shall be substantially supported and protected against physical damage and excessive stresses arising from settlement, vibration, expansion, or contraction.

(5) Protection against corrosion. All piping for flammable or combustible liquids, both aboveground and underground, where subject to external corrosion, shall be painted or otherwise protected.

(6) Valves. Piping systems shall contain a sufficient number of valves to operate the system properly and to protect the plant. Piping systems in connection with pumps shall contain a sufficient number of valves to control properly the flow of liquid in normal operation and in the event of physical damage. Each connection to pipelines, by which equipment such as tankcars or tank vehicles discharge liquids by means of pumps into storage tanks, shall be provided with a check valve for automatic protection against backflow if the piping arrangement is such that backflow from the system is possible.

(7) Testing. All piping before being covered, enclosed, or placed in use shall be hydrostatically tested to 150 percent of the maximum anticipated pressure of the system, or pneumatically tested to 110 percent of the maximum anticipated pressure of the system, but not less than 5 pounds per square inch gage at the highest point of the system. This test shall be maintained for a sufficient time to complete visual inspection of all joints and connections, but for at least 10 minutes.

[Order 76-6, § 296-24-33007, filed 3/1/76; Order 73-5, § 296-24-33007, filed 5/9/73 and Order 73-4, § 296-24-33007, filed 5/7/73.]

WAC 296-24-33009 Container and portable tank storage. (1) Scope.

(a) General. This section shall apply only to the storage of flammable or combustible liquids in drums or other containers (including flammable aerosols) not exceeding 60 gallons individual capacity and those portable tanks not exceeding 660 gallons individual capacity.

(b) Exceptions. This section shall not apply to the following:

(i) Storage of containers in bulk plants, service stations, refineries, chemical plants, and distilleries;

(ii) Class I or Class II liquids in the fuel tanks of a motor vehicle, aircraft, boat, or portable or stationary engine;

(iii) Flammable or combustible paints, oils, varnishes, and similar mixtures used for painting or maintenance when not kept for a period in excess of 30 days;

(iv) Beverages when packaged in individual containers not exceeding 1 gallon in size.

(2) Design, construction, and capacity of containers.

(a) General. Only approved containers and portable tanks shall be used. Metal containers and portable tanks meeting the requirements of and containing products authorized by Chapter I, Title 49 of the Code of Federal Regulations – October 1, 1972, (regulations issued by the hazardous materials regulations board, department of transportation), shall be deemed to be acceptable.

(b) Emergency venting. Each portable tank shall be provided with one or more devices installed in the top with sufficient emergency venting capacity to limit internal pressure under fire exposure conditions to 10 p.s.i.g., or 30 percent of the bursting pressure of the tank, whichever is greater. The total venting capacity shall be not less than that specified in WAC 296-24-33005 (2)(e)(iii) or (v). At least one pressure-actuated vent having a minimum capacity of 6,000 cubic feet of free air (14.7 p.s.i.a. and 60°F) shall be used. It shall be set to open at not less than 5 p.s.i.g. If fusible vents are used, they shall be actuated by elements that operate at a temperature not exceeding 300°F.

TABLE H-12

MAXIMUM ALLOWABLE SIZE OF CONTAINERS AND PORTABLE TANKS

Container Type	Flammable liquids			Combustible Liquids	
	Class IA	Class IB	Class IC	Class II &	Class III
Glass or approved plastic	1 pt.	1 qu.	1 gal.	1 gal.	1 gal.
Metal (other than DOT drums)	1 gal.	5 gal.	5 gal.	5 gal.	5 gal.
Safety cans	2 gal.	5 gal.	5 gal.	5 gal.	5 gal.
Metal drums (DOT spec.)	60 gal.	60 gal.	60 gal.	60 gal.	60 gal.
Approved portable tanks	660 gal.	660 gal.	660 gal.	660 gal.	660 gal.

Container exemptions:

(i) Medicines, beverages, foodstuffs, cosmetics and other common consumer items, when packaged according to commonly accepted practices, shall be exempt from the requirements of (4)(a) and (b) of this section.

(c) Size. Flammable and combustible liquid containers shall be in accordance with Table H-12, except that glass or plastic containers of no more than 1-gallon capacity may be used for a Class IA or IB flammable liquid if:

(i) Such liquid either would be rendered unfit for its intended use by contact with metal or would excessively corrode a metal container so as to create a leakage hazard; and

(ii) The user's process either would require more than 1 pint of Class IA liquid or more than 1 quart of a Class IB liquid of a single assay lot to be used at one time, or would require the maintenance of an analytical standard liquid of a quality which is not met by the specified standards of liquids available, and the quantity of the analytical standard liquid required to be used in any one control process exceeds one-sixteenth the capacity of the container allowed under Table H-12 for the class of liquid; or

(iii) The containers are intended for direct export outside the United States.

(3) Design, construction, and capacity of storage cabinets.

(a) Maximum capacity. Not more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids may be stored in a storage cabinet.

(b) Fire resistance. Storage cabinets shall be designed and constructed to limit the internal temperature to not more than 325°F when subjected to a 10-minute fire test using the standard time-temperature curve as set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. All joints and seams shall remain tight and the door shall remain securely closed during the fire test. Cabinets shall be labeled "Flammable—Keep fire away," to meet specifications set forth in WAC 296-24-140.

(i) Metal cabinets constructed in the following manner shall be deemed to be in compliance. The bottom, top, door, and sides of cabinet shall be at least No. 18 gage sheet iron and double walled with 1 1/2-inch air space. Joints shall be riveted, welded or made tight by some equally effective means. The door shall be provided with a three-point lock, and the door sill shall be raised at least 2 inches above the bottom of the cabinet.

(ii) Wooden cabinets constructed in the following manner shall be deemed in compliance. The bottom, sides, and top shall be constructed of an approved grade of plywood at least 1 inch in thickness, which shall not break down or delaminate under fire conditions. All joints shall be rabbetted and shall be fastened in two directions with flathead woodscrews. When more than one door is used, there shall be a rabbetted overlap of not less than 1 inch. Hinges shall be mounted in such a manner as not to lose their holding capacity due to loosening or burning out of the screws when subjected to the fire test.

(4) Design and construction of inside storage rooms.

(a) Construction. Inside storage rooms shall be constructed to meet the required fire-resistive rating for their use. Such construction shall comply with the test specifications set forth in Standard Methods of Fire Tests of Building Construction and Materials, NFPA 251-1969. Where an automatic sprinkler system is provided, the system shall be designed and installed in an acceptable manner. Openings to other rooms or buildings shall be provided with noncombustible liquid-tight raised sills or ramps at least 4 inches in height, or the floor in the storage area shall be at least 4 inches below the surrounding floor. Openings shall be provided with approved self-closing fire doors. The room shall be liquid tight where the walls join the floor. A permissible alternate to the sill or ramp is an open-grated trench inside of the room which drains to a safe location. Where other portions of the building or other properties are exposed, windows shall be protected as set forth in the Standard for Fire Doors and Windows, NFPA No. 80-1968, for Class E or F openings. Wood at least 1 inch nominal thickness may be used for shelving, racks, dunnage, scuffboards, floor overlay, and similar installations.

(b) Rating and capacity. Storage in inside storage rooms shall comply with Table H-13.

TABLE H-13

STORAGE IN INSIDE ROOMS

Fire protection* provided	Fire resistance	Maximum size	Total allowable quantities (gals./sq. ft./floor area)
Yes	2 hours	500 sq.ft.	10
No	2 hours	500 sq.ft.	4
Yes	1 hour	150 sq.ft.	5
No	1 hour	150 sq.ft.	2

*Fire protection system shall be sprinkler, water spray, carbon dioxide, or other system.

(c) Wiring. Electrical wiring and equipment within inside storage rooms used to store Class I liquids shall comply with the provisions of WAC 296-24-956 through 296-24-960 for Class I, Division 2 locations. For inside storage rooms used to store Class II and III liquids the pertinent provisions WAC 296-24-956 through 296-24-960 apply.

(d) Ventilation. Every inside storage room shall be provided with either a gravity or a mechanical exhaust ventilation system. Such system shall be designed to provide for a complete change of air within the room at least six times per hour. If a mechanical exhaust system is used, it shall be controlled by a switch located outside of the door. The ventilating equipment and any lighting fixtures shall be operated by the same switch. A pilot light shall be installed adjacent to the switch if Class I flammable liquids are dispensed within the room. Where gravity ventilation is provided, the fresh air intake, as well as the exhaust outlet from the room, shall be on the exterior of the building in which the room is located.

(e) Storage in inside storage rooms. In every inside storage room there shall be maintained one clear aisle at least 3 feet wide. Containers over 30 gallons capacity shall not be stacked one upon the other. Dispensing shall be by approved pump or self-closing faucet only.

(5) Storage inside building.

(a) Egress. Flammable or combustible liquids, including stock for sale, shall not be stored so as to limit use of exits, stairways, or areas normally used for the safe egress of people.

(b) Containers. The storage of flammable or combustible liquids in containers or portable tanks shall comply with (4)(c) through (e) of this section.

(c) Office occupancies. Storage shall be prohibited except that which is required for maintenance and operation of building and operation of equipment. Such storage shall be kept in closed metal containers stored in a storage cabinet or in safety cans or in an inside storage room not having a door that opens into that portion of the building used by the public.

(d) Mercantile occupancies and other retail stores.

(i) In rooms or areas accessible to the public, storage shall be limited to quantities needed for display and normal merchandising purposes but shall not exceed 2 gallons per square foot of gross floor area. The gross floor area used for computing the maximum quantity permitted shall be considered as that portion of the store actually being used for merchandising flammable and combustible liquids.

(ii) Where the aggregate quantity of additional stock exceeds 60 gallons of Class IA, or 120 gallons of Class IB, or 180 gallons of Class IC, or 240 gallons of Class II, or 500 gallons of Class III liquids, or any combination of Class I and Class II liquids exceeding 240 gallons, it shall be stored in a room or portion of the building that complies with the construction provisions for an inside storage room as prescribed in (4) of this section. For water miscible liquids, these quantities may be doubled.

(iii) Containers in a display area shall not be stacked more than 3 feet or two containers high, whichever is the greater, unless the stacking is done on fixed shelving or is otherwise satisfactorily secured.

(iv) Shelving shall be of stable construction, of sufficient depth and arrangement such that containers displayed thereon shall not be easily displaced.

(v) Leaking containers shall be removed to a storage room or taken to a safe location outside the building and the contents transferred to an undamaged container.

(e) General purpose public warehouses. Storage shall be in accordance with Table H-14 or H-15 and in buildings or in portions of such buildings cut off by standard firewalls. Material creating no fire exposure hazard to the flammable or combustible liquids may be stored in the same area.

TABLE H-14

INDOOR CONTAINER STORAGE

Class liquid	Storage level	Protected storage maximum per pile		Unprotected storage maximum per pile	
		Gal.	Ht.	Gal.	Ht.
IA	Ground and upper floors	2,750 (50)	3 ft. (1)	660 (12)	3 ft. (1)
	Basement	Not permitted		Not permitted	
IB	Ground and upper floors	5,500 (100)	6 ft. (2)	1,375 (25)	3 ft. (1)
	Basement	Not permitted		Not permitted	
IC	Ground and upper floors	16,500 (300)	6 ft. (2)	4,125 (75)	3 ft. (1)
	Basement	Not permitted		Not permitted	
II	Ground and upper floors	16,500 (300)	9 ft. (3)	4,125 (75)	9 ft. (3)
	Basement	5,500 (100)	9 ft. (3)	Not permitted	
III	Ground and upper floors	55,000 (1,000)	15 ft. (5)	13,750 (250)	12 ft. (4)
	Basement	8,250 (450)	9 ft. (3)	Not permitted	

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile shall be the smallest of the 2 or more separate maximum gallonages.

Note 2: Aisles shall be provided so that no container is more than 12 ft. from an aisle. Main aisles shall be at least 8 ft. wide and side aisles at least 4 ft. wide.

(Numbers in parentheses indicate corresponding number of 55-gal. drums.)

Note 3: Each pile shall be separated from each other by at least 4 ft.

TABLE H-15

INDOOR PORTABLE TANK STORAGE

Class liquid	Storage level	Protected storage maximum per pile		Unprotected storage maximum per pile	
		Gals.	Ht.	Gals.	Ht.
IA	Ground and upper floors	Not permitted		Not permitted	
	Basement	Not permitted		Not permitted	
IB	Ground and upper floors	20,000	7 ft.	2,000	7 ft.
	Basement	Not permitted		Not permitted	
IC	Ground and upper floors	40,000	14 ft.	5,500	7 ft.
	Basement	Not permitted		Not permitted	
II	Ground and upper floors	40,000	14 ft.	5,500	7 ft.
	Basement	20,000	7 ft.	Not permitted	
III	Ground and upper floors	60,000	14 ft.	22,000	7 ft.
	Basement	20,000	7 ft.	Not permitted	

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage permitted in that pile shall be the smallest of the 2 or more separate maximum gallonages.

Note 2: Aisles shall be provided so that no portable tank is more than 12 ft. from an aisle. Main aisles shall be at least 8 ft. wide and side aisles at least 4 ft. wide.

Note 3: Each pile shall be separated from each other by at least 4 ft.

(f) Flammable and combustible liquid warehouses or storage buildings. (i) If the storage building is located 50 feet or less from a building or line of adjoining property that may be built upon, the exposing wall shall be a blank wall having a fire-resistance rating of at least 2 hours.

(ii) The total quantity of liquids within a building shall not be restricted, but the arrangement of storage shall comply with Table H-14 or H-15.

(iii) Containers in piles shall be separated by pallets or dunnage where necessary to provide stability and to prevent excessive stress on container walls.

(iv) Portable tanks stored over one tier high shall be designed to nest securely, without dunnage and adequate materials handling equipment shall be available to handle tanks safely at the upper tier level.

(v) No pile shall be closer than 3 feet to the nearest beam, chord, girder, or other obstruction, and shall be 3 feet below sprinkler deflectors or discharge orifices of water spray, or other overhead fire protection systems.

(vi) Aisles of at least 3 feet wide shall be provided where necessary for reasons of access to doors, windows or standpipe connections.

(6) Storage outside buildings.

(a) General. Storage outside buildings shall be in accordance with Table H-16 or H-17, and (6)(b) and (d) of this section.

TABLE H-16

OUTDOOR CONTAINER STORAGE

1 Class	2 Maximum per pile (see note 1)	3 Distance between piles (see note 2)	4 Distance to property line that can be built upon (see notes 3 & 4)	5 Distance to street, alley, public way (see note 4)
	gal.	ft.	ft.	ft.
IA	1,100	5	20	10
IB	2,200	5	20	10
IC	4,400	5	20	10
II	8,800	5	10	5
III	22,000	5	10	5

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage in that pile shall be the smallest of the 2 or more separate gallonages.

Note 2: Within 200 ft. of each container, there shall be 12-ft. wide access way to permit approach of fire control apparatus.

Note 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 shall be doubled.

Note 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distances in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

(b) Maximum storage. A maximum of 1,100 gallons of flammable or combustible liquids may be located adjacent to buildings located on the same premises and under the same management provided the provisions of (6)(b)(i) and (ii) are complied with.

(i) The building shall be a one-story building devoted principally to the handling and storing of flammable or combustible liquids or the building shall have 2 hour fire-resistive exterior walls having no opening within 10 feet of such storage.

(ii) Where quantity stored exceeds 1,100 gallons, or provisions of (6)(b)(i) cannot be met, a minimum distance of 10 feet between buildings and nearest container of flammable or combustible liquid shall be maintained.

TABLE H-17

OUTDOOR PORTABLE TANK STORAGE

1 Class	2 Maximum per pile	3 Distance between piles	4 Distance to property line that can be built upon	5 Distance to street, alley, public way
	gal.	ft.	ft.	ft.
IA	2,200	5	20	10
IB	4,400	5	20	10
IC	8,800	5	20	10

TABLE H-17

OUTDOOR PORTABLE TANK STORAGE

1 Class	2 Maximum per pile	3 Distance between piles	4 Distance to property line that can be built upon	5 Distance to street, alley, public way
	gal.	ft.	ft.	ft.
II	17,600	5	10	5
III	44,000	5	10	5

Note 1: When 2 or more classes of materials are stored in a single pile, the maximum gallonage in that pile shall be the smallest of the 2 or more separate gallonages.

Note 2: Within 200 ft. of each portable tank, there shall be a 12-ft. wide access way to permit approach of fire control apparatus.

Note 3: The distances listed apply to properties that have protection for exposures as defined. If there are exposures, and such protection for exposures does not exist, the distances in column 4 shall be doubled.

Note 4: When total quantity stored does not exceed 50 percent of maximum per pile, the distances in columns 4 and 5 may be reduced 50 percent, but not less than 3 ft.

(c) Spill containment. The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures or shall be surrounded by a curb at least 6 inches high. When curbs are used, provisions shall be made for draining of accumulations of ground or rain water or spills of flammable or combustible liquids. Drains shall terminate at a safe location and shall be accessible to operation under fire conditions.

(d) Security. The storage area shall be protected against tampering or trespassers where necessary and shall be kept free of weeds, debris and other combustible material not necessary to the storage.

(7) Fire control.

(a) Extinguishers. Suitable fire control devices, such as small hose or portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored.

(i) At least one portable fire extinguisher having a rating of not less than 12-B units shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage.

(ii) At least one portable fire extinguisher having a rating of not less than 12-B units must be located not less than 10 feet, nor more than 25 feet, from any Class I or Class II liquid storage area located outside of a storage room but inside a building.

(b) Sprinklers. When sprinklers are provided, they shall be installed in accordance with WAC 296-24-605 through 296-24-60509.

(c) Open flames and smoking. Open flames and smoking shall not be permitted in flammable or combustible liquid storage areas.

(d) Water reactive materials. Materials which will react with water shall not be stored in the same room with flammable or combustible liquids.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33009, filed 4/19/85; Order 76-6, § 296-24-33009, filed 3/1/76; Order 74-27, § 296-24-33009, filed 5/7/74; Order 73-5, § 296-24-33009, filed 5/9/73 and Order 73-4, § 296-24-33009, filed 5/7/73.]

WAC 296-24-33011 Industrial plants. (1) Scope.

(a) Application. This paragraph shall apply to those industrial plants where:

(i) The use of flammable or combustible liquids is incidental to the principal business, or

(ii) Where flammable or combustible liquids are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical reaction. This section shall not apply to chemical plants, refineries or distilleries.

(b) Exceptions. Where portions of such plants involve chemical reactions such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes, those portions of the plant shall be in accordance with WAC 296-24-33017.

(2) Incidental storage or use of flammable and combustible liquids.

(a) Application. This shall be applicable to those portions of an industrial plant where the use and handling of flammable or combustible liquids is only incidental to the principal business, such as automobile assembly, construction of electronic equipment, furniture manufacturing, or other similar activities.

(b) Containers. Flammable or combustible liquids shall be stored in tanks or closed containers.

(i) Except as provided in (2)(b)(ii) and (iii) of this section all storage shall comply with WAC 296-24-33009 (3) or (4).

(ii) The quantity of liquid that may be located outside of an inside storage room or storage cabinet in a building or in any one fire area of a building shall not exceed:

(A) 25 gallons of Class IA liquids in containers

(B) 120 gallons of Class IB, IC, II, or III liquids in containers

(C) 660 gallons of Class IB, IC, II, or III liquids in a single portable tank.

(iii) Where large quantities of flammable or combustible liquids are necessary, storage may be in tanks which shall comply with the applicable requirements of WAC 296-24-33005.

(c) Separation and protection. Areas in which flammable or combustible liquids are transferred from one tank or container to another container shall be separated from other operations in the building by adequate distance or by construction having adequate fire resistance. Drainage or other means shall be provided to control spills. Adequate natural or mechanical ventilation shall be provided.

(d) Handling liquids at point of final use.

(i) Flammable liquids shall be kept in covered containers when not actually in use.

(ii) Where flammable or combustible liquids are used or handled, except in closed containers, means shall be provided to dispose promptly and safely of leakage or spills.

(iii) Class I liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel.

(iv) Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited.

(3) Unit physical operations.

(a) Application. This subdivision (3) shall be applicable in those portions of industrial plants where flammable or combustible liquids are handled or used in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical change. Examples are plants compounding cosmetics, pharmaceuticals, solvents, cleaning fluids, insecticides, and similar types of activities.

(b) Location. Industrial plants shall be located so that each building or unit of equipment is accessible from at least one side for firefighting and fire control purposes. Buildings shall be located with respect to lines of adjoining property which may be built upon as set forth in WAC 296-24-33017 (2)(a) and (b) except that the blank wall referred to in WAC 296-24-33017 (2)(b) shall have a fire resistance rating of at least 2 hours.

(c) Chemical processes. Areas where unstable liquids are handled or small scale unit chemical processes are carried on shall be separated from the remainder of the plant by a fire wall of 2-hour minimum fire resistance rating.

(d) Drainage.

(i) Emergency drainage systems shall be provided to direct flammable or combustible liquid leakage and fire protection water to a safe location. This may require curbs, scuppers, or special drainage systems to control the spread of fire; see WAC 296-24-33005 (2)(g)(ii).

(ii) Emergency drainage systems, if connected to public sewers or discharged into public waterways, shall be equipped with traps or separators.

(iii) The industrial plant shall be designed and operated to prevent the normal discharge of flammable or combustible liquids into public waterways, public sewers, or adjoining property.

(e) Ventilation.

(i) Areas as defined in (1)(a) of this section using Class I liquids shall be ventilated at a rate of not less than 1 cubic foot per minute per square foot of solid floor area. This shall be accomplished by natural or mechanical ventilation with discharge or exhaust to a safe location outside of the building. Provision shall be made for introduction of makeup air in such a manner as not to short circuit the ventilation. Ventilation shall be arranged to include all floor areas or pits where flammable vapors may collect.

(ii) Equipment used in a building and the ventilation of the building shall be designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than 5 feet from equipment which exposes Class I liquids to the air. Examples of such equipment are dispensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.

(f) Storage and handling. The storage, transfer, and handling of liquid shall comply with WAC 296-24-33017(4) of this section.

(4) Tank vehicle and tank car loading and unloading.

(a) Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property which may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class II and Class III liquids measured from the nearest position of any fill stem. Buildings for pumps or shelters for personnel may be a part of the facility. Operations of the facility shall comply with the appropriate portions of WAC 296-24-33013(3).

(5) Fire control.

(a) Portable and special equipment. Portable fire extinguishment and control equipment shall be provided in such quantities and types as are needed for the special hazards of operation and storage.

(b) Water supply. Water shall be available in volume and at adequate pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation, dispensing and storage.

(c) Special extinguishers. Special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical shall be provided as the need is indicated by the special hazards of operation dispensing and storage.

(d) Special hazards. Where the need is indicated by special hazards of operation, flammable or combustible liquid processing equipment, major piping, and supporting steel shall be protected by approved water spray systems, deluge systems, approved fire-resistant coatings, insulation, or any combination of these.

(e) Maintenance. All plant fire protection facilities shall be adequately maintained and periodically inspected and tested to make sure they are always in satisfactory operating condition, and they will serve their purpose in time of emergency.

(6) Sources of ignition.

(a) General. Adequate precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical and mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

(b) Grounding. Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of these standards shall be deemed to have been complied with.

(7) Electrical.

(a) Equipment.

(i) All electrical wiring and equipment shall be installed according to the requirements of WAC 296-24-956 through 296-24-960.

(ii) Locations where flammable vapor-air mixtures may exist under normal operations shall be classified Class I, Division 1 according to the requirements of WAC 296-24-956 through 296-24-960. For those pieces of equipment installed in accordance with the requirements of subsection (3)(e)(ii) of this section, the Division 1 area shall extend 5 feet in all directions from all points of vapor liberation. All areas within pits shall be classified Division 1 if any part of the pit is within a Division 1 or 2 classified area, unless the pit is provided with mechanical ventilation.

(iii) Locations where flammable vapor-air mixtures may exist under abnormal conditions and for a distance beyond Division 1 locations shall be classified Division 2 according to the requirements of WAC 296-24-956 through 296-24-960. These locations include an area within 20 feet horizontally, 3 feet vertically beyond a Division 1 area, and up to 3 feet above floor or grade level within 25 feet, if indoors, or 10 feet if outdoors, from any pump, bleeder, withdrawal fitting, meter, or similar device handling Class I liquids. Pits provided with adequate mechanical ventilation within a Division 1 or 2 area shall be classified Division 2. If Class II or Class III liquids only are handled, then ordinary electrical equipment is satisfactory though care shall be used in locating electrical apparatus to prevent hot metal from falling into open equipment.

(iv) Where the provisions of (i), (ii) and (iii) of this section require the installation of electrical equipment suitable for Class I, Division 1 or Division 2 locations, ordinary electrical equipment including switchgear may be used if installed in a room or enclosure which is maintained under positive pressure with respect to the hazardous area. Ventilation makeup air shall be uncontaminated by flammable vapors.

(8) Repairs to equipment. Hot work, such as welding or cutting operations, use of spark-producing power tools, and chipping operations shall be permitted only under supervision of an individual in responsible charge. The individual in responsible charge shall make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

(9) Housekeeping.

(a) General. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.

(b) Access. Adequate aisles shall be maintained for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of flammable or combustible liquid storage, use, or any unit physical operation.

(c) Waste and residue. Combustible waste material and residues in a building or unit operating area shall be kept to a minimum, stored in covered metal receptacles and disposed of daily.

(d) Clear zone. Ground area around buildings and unit operating areas shall be kept free of weeds, trash, or other unnecessary combustible materials.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33011, filed 4/19/85; Order 76-6, § 296-24-33011, filed 3/1/76; Order 73-5, § 296-24-33011, filed 5/9/73 and Order 73-4, § 296-24-33011, filed 5/7/73.]

WAC 296-24-33013 Bulk plants. (1) Storage.

(a) Class I liquids. Class I liquids shall be stored in closed containers, or in storage tanks above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(b) Class II and III liquids. Class II and Class III liquids shall be stored in containers, or in tanks within buildings or above ground outside of buildings, or underground in accordance with WAC 296-24-33005.

(c) Piling containers. Containers of flammable or combustible liquids when piled one upon the other shall be separated by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile shall be consistent with the stability and strength of containers.

(2) Buildings.

(a) Exits. Rooms in which flammable or combustible liquids are stored or handled by pumps shall have exit facilities arranged to prevent occupants from being trapped in the event of fire.

(b) Heating. Rooms in which Class I liquids are stored or handled shall be heated only by means not constituting a source of ignition, such as steam or hot water. Rooms containing heating appliances involving sources of ignition shall be located and arranged to prevent entry of flammable vapors.

(c) Ventilation.

(i) Ventilation shall be provided for all rooms, buildings, or enclosures in which Class I liquids are pumped or dispensed. Design of ventilation systems shall take into account the relatively high specific gravity of the vapors. Ventilation may be provided by adequate openings in outside walls at floor level unobstructed except by louvers or course screens. Where natural ventilation is inadequate, mechanical ventilation shall be provided.

(ii) Class I liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(iii) Containers of Class I liquids shall not be drawn from or filled within buildings unless provision is made to prevent the accumulation of flammable vapors in hazardous concentrations. Where mechanical ventilation is required, it shall be kept in operation while flammable liquids are being handled.

(3) Loading and unloading facilities.

(a) Separation. Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property that may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class

II and Class III liquids measured from the nearest position of any fill spout. Buildings for pumps or shelters for personnel may be a part of the facility.

(b) Class restriction. Equipment such as piping, pumps, and meters used for the transfer of Class I liquids between storage tanks and the fill stem of the loading rack shall not be used for the transfer of Class II or Class III liquids.

(c) Valves. Valves used for the final control for filling tank vehicles shall be of the self–closing type and manually held open except where automatic means are provided for shutting off the flow when the vehicle is full or after filling of a preset amount.

(d) Static protection.

(i) Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided:

(A) Where Class I liquids are loaded, or

(B) Where Class II or Class III liquids are loaded into vehicles which may contain vapors from previous cargoes of Class I liquids.

(ii) Protection as required in (3)(d)(i) of this section shall consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire shall be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

(iii) Such bonding connection shall be made fast to the vehicle or tank before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

(iv) Bonding as specified in (3)(d)(i), (ii) and (iii) of this section is not required:

(A) Where vehicles are loaded exclusively with products not having a static accumulating tendency, such as asphalt, most crude oils, residual oils, and water soluble liquids;

(B) Where no Class I liquids are handled at the loading facility and the tank vehicles loaded are used exclusively for Class II and Class III liquids; and

(C) Where vehicles are loaded or unloaded through closed bottom or top connections.

(v) Filling through open domes into the tanks of tank vehicles or tank cars, that contain vapor–air mixtures within the flammable range or where the liquid being filled can form such a mixture, shall be by means of a downspout which extends near the bottom of the tank. This precaution is not required when loading liquids which are nonaccumulators of static charges.

(e) Stray currents. Tank car loading facilities where Class I liquids are loaded through open domes shall be protected against stray currents by bonding the pipe to at least one rail and to the rack structure if of metal. Multiple lines entering the rack area shall be electrically bonded together. In addition, in areas where excessive stray currents are known to exist, all pipe entering the rack area shall be provided with insulating sections to electrically isolate the rack piping from the pipelines. No bonding between the tank car and the rack or piping is required during either loading or unloading of Class II or III liquids.

(f) Container filling facilities. Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of these standards shall be deemed to have been complied with.

(4) Wharves.

(a) Definition, application. The term wharf shall mean any wharf, pier, bulkhead, or other structure over or contiguous to navigable water used in conjunction with a bulk plant, the primary function of which is the transfer of flammable or combustible liquid cargo in bulk between the bulk plant and any tank vessel, ship, barge, lighter boat, or other mobile floating craft; and this subparagraph shall apply to all such installations except marine service stations as covered in WAC 296–24–33015.

(b) Package cargo. Package cargo of flammable and combustible liquids, including full and empty drums, bulk fuel, and stores may be handled over a wharf and at such times and places as may be agreed upon by the wharf superintendent and the senior deck officer on duty.

(c) Location. Wharves at which flammable or combustible liquid cargoes are to be transferred in bulk quantities to or from tank vessels shall be at least 100 feet from any bridge over a navigable waterway, or from an entrance to or superstructure of any vehicular or railroad tunnel under a waterway. The termination of the wharf loading or unloading fixed piping shall be at least 200 feet from a bridge or from an entrance to or superstructure of a tunnel.

(d) Design and construction. Substructure and deck shall be substantially designed for the use intended. Deck may employ any material which will afford the desired combination of flexibility, resistance to shock, durability, strength, and fire resistance. Heavy timber construction is acceptable.

(e) Tanks. Tanks used exclusively for ballast water or Class II or Class III liquids may be installed on suitably designed wharves.

(f) Pumps. Loading pumps capable of building up pressures in excess of the safe working pressure of cargo hose or loading arms shall be provided with bypasses, relief valves, or other arrangement to protect the loading facilities against excessive pressure. Relief devices shall be tested at not more than yearly intervals to determine that they function satisfactorily at the pressure at which they are set.

(g) Hoses and couplings. All pressure hoses and couplings shall be inspected at intervals appropriate to the service. The hose and couplings shall be tested with the hose extended and using the "inservice maximum operating pressures." Any hose showing material deteriorations, signs of leakage, or weakness in its carcass or at the couplings shall be withdrawn from service and repaired or discarded.

(h) Piping and fittings. Piping, valves, and fittings shall be in accordance with WAC 296-24-33007 with the following exceptions and additions:

(i) Flexibility of piping shall be assured by appropriate layout and arrangement of piping supports so that motion of the wharf structure resulting from wave action, currents, tides, or the mooring of vessels will not subject the pipe to repeated strain beyond the elastic limit.

(ii) Pipe joints depending upon the friction characteristics of combustible materials or grooving of pipe ends for mechanical continuity of piping shall not be used.

(iii) Swivel joints may be used in piping to which hoses are connected, and for articulated swivel-joint transfer systems, provided that the design is such that the mechanical strength of joint will not be impaired if the packing material should fail, as by exposure to fire.

(iv) Piping systems shall contain a sufficient number of valves to operate the system properly and to control the flow of liquid in normal operation and in the event of physical damage.

(v) In addition to the requirements of (4)(h)(iv), each line conveying flammable liquids leading to a wharf shall be provided with a readily accessible block valve located on shore near the approach to the wharf and outside of any diked area. Where more than one line is involved, the valves shall be grouped in one location.

(vi) Means of easy access shall be provided for cargo line valves located below the wharf deck.

(vii) Pipelines on flammable or combustible liquids wharves shall be adequately bonded and grounded. If excessive stray currents are encountered, insulating points shall be installed. Bonding and grounding connections on all pipelines shall be located on wharfside of hose-riser insulating flanges, if used, and shall be accessible for inspection.

(viii) Hose or articulated swivel-joint pipe connections used for cargo transfer shall be capable of accommodating the combined effects of change in draft and maximum tidal range, and mooring lines shall be kept adjusted to prevent the surge of the vessel from placing stress on the cargo transfer system.

(ix) Hose shall be supported so as to avoid kinking and damage from chafing.

(i) Fire protection. Suitable portable fire extinguishers with a rating of not less than 12-BC shall be located with 75 feet of those portions of the facility where fires are likely to occur, such as hose connections, pumps, and separator tanks.

(i) Where piped water is available, ready-connected fire hose in size appropriate for the water supply shall be provided so that manifolds where connections are made and broken can be reached by at least one hose stream.

(ii) Material shall not be placed on wharves in such a manner as to obstruct access to firefighting equipment, or important pipeline control valves.

(iii) Where the wharf is accessible to vehicle traffic, an unobstructed roadway to the shore end of the wharf shall be maintained for access of firefighting apparatus.

(j) Operations control. Loading or discharging shall not commence until the wharf superintendent and officer in charge of the tank vessel agree that the tank vessel is properly moored and all connections are properly made. Mechanical work shall not be performed on the wharf during cargo transfer, except under special authorization by a delegated person or his authorized representative based on a review of the area involved, methods to be employed, and precaution necessary.

(5) Electrical equipment.

(a) Application. This subsection shall apply to areas where Class I liquids are stored or handled. For areas where Class II or Class III liquids only are stored or handled, the electrical equipment may be installed in accordance with the provisions of WAC 296-24-956 through 296-24-960 for ordinary locations.

(b) Conformance. All electrical equipment and wiring shall be of a type specified by and shall be installed in accordance with WAC 296-24-956 through 296-24-960.

(c) Classification. So far as it applies Table H-18 shall be used to delineate and classify hazardous areas for the purpose of installation of electrical equipment under normal circumstances. In Table H-18 a classified area shall not extend beyond an unpierced wall, roof, or other solid partition. The area classifications listed shall be based on the premise that the installation meets the applicable requirements of this section in all respects.

TABLE H-18

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—BULK PLANTS

Location	NEC Class I Group D division	Extent of classified area
Tank vehicle and tank car:[1]		
Loading through open dome	1	Within 3 feet of edge of dome, extending in all directions.
	2	Area between 3 feet and 5 feet from edge of dome, extending in all directions.
Loading through bottom connections with atmospheric venting	1	Within 3 feet of point of venting to atmosphere, extending in all directions.
	2	Area between 3 feet and 5 feet from point of venting to atmosphere, extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of loading connection.
Loading through closed dome with atmospheric venting	1	Within 3 feet of open end of vent, extending in all directions.

TABLE H-18

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—BULK PLANTS

Location	NEC Class I Group D division	Extent of classified area
	2	Area between 3 feet and 5 feet from open end of vent, extending in all directions. Also within 3 feet of edge of dome, extending in all directions.
Loading through closed dome with vapor recovery	2	Within 3 feet of point of connection of both fill and vapor lines, extending in all directions.
Bottom loading with vapor recovery or any bottom unloading	2	Within 3 feet of point of connections extending in all directions. Also up to 18 inches above grade within a horizontal radius of 10 feet from point of connection.
Drum and container filling:		
Outdoors, or indoors with adequate ventilation	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Outdoors, or indoors with adequate ventilation	1	Within 3 feet of vent and fill opening, extending in all directions.
	2	Area between 3 feet and 5 feet from vent or fill opening, extending in all directions. Also up to 18 inches above floor or grade level within a horizontal radius of 10 feet from vent or fill opening.
Tank—Aboveground:		
Shell, ends, or roof and dike area	2	Within 10 feet from shell, ends, or roof of tank, area inside dikes to level of top of dike.
Vent	1	Within 5 feet of open end of vent, extending in all directions.
	2	Area between 5 feet and 10 feet from open end of vent, extending in all directions.
Floating roof	1	Area above the roof and within the shell.
Pits:		
Without mechanical ventilation	1	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area	2	Entire pit.
Pumps, bleeders, withdrawal fittings, meters and similar devices:		
Indoors	2	Within 5 feet of any edge of such devices, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of such devices.
Outdoors	2	Within 3 feet of any edge of such devices, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of such devices.
Storage and repair garage for tank vehicles	1	All pits or spaces below floor level.
	2	Area up to 18 inches above floor or grade level for entire storage or repair garage.
Drainage ditches, separators, impounding basins	2	Area up to 18 inches above ditch, separator or basin. Also up to 18 inches above grade within 15 feet horizontally from any edge.
Garages for other than tank vehicles	Ordinary	If there is any opening to these rooms within the extent of an outdoor classified area, the entire room shall be classified the same as the area classification at the point of the opening.
Outdoor drum storage	Ordinary	

TABLE H-18

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—BULK PLANTS

Location	NEC Class I Group D division	Extent of classified area
Indoor warehousing where there is no flammable liquid transfer	Ordinary	If there is any opening to these rooms within the extent of an indoor classified area, the room shall be classified the same as if the wall, curb or partition did not exist.
Office and rest rooms	Ordinary	

[1]When classifying the extent of the area, consideration shall be given to the fact that tank cars or tank vehicles may be spotted at varying points. Therefore, the extremities of the loading or unloading positions shall be used.

(6) Sources of ignition. Class I liquids shall not be handled, drawn, or dispensed where flammable vapors may reach a source of ignition. Smoking shall be prohibited except in designated localities. "No smoking" signs shall be conspicuously posted where hazard from flammable liquid vapors is normally present.

(7) Drainage and waste disposal. Provision shall be made to prevent flammable or combustible liquids which may be spilled at loading or unloading points from entering public sewers and drainage systems, or natural waterways. Connection to such sewers, drains, or waterways by which flammable or combustible liquids might enter shall be provided with separator boxes or other approved means whereby such entry is precluded. Crankcase drainings and flammable or combustible liquids shall not be dumped into sewers, but shall be stored in tanks or tight drums outside of any building until removed from the premises.

(8) Fire control. Suitable fire-control devices, such as small hose or portable fire extinguishers, shall be available to locations where fires are likely to occur. Additional fire-control equipment may be required where a tank of more than 50,000 gallons individual capacity contains Class I liquids and where an unusual exposure hazard exists from surrounding property. Such additional fire-control equipment shall be sufficient to extinguish a fire in the largest tank. The design and amount of such equipment shall be in accordance with approved engineering standards.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33013, filed 4/19/85; Order 76-6, § 296-24-33013, filed 3/1/76; Order 73-5, § 296-24-33013, filed 5/9/73 and Order 73-4, § 296-24-33013, filed 5/7/73.]

WAC 296-24-33015 Service stations. (1) Storage and handling.

(a) General provisions.

(i) Liquids shall be stored in approved closed containers not exceeding 60 gallons capacity, in tanks located underground, in tanks in special enclosures as described in (b) of this subsection, or in aboveground tanks as provided for in (3)(b)(i), (ii), (iii) and (iv) of this section.

(ii) Aboveground tanks, located in an adjoining bulk plant, may be connected by piping to service station underground tanks if, in addition to valves at aboveground tanks, a valve is also installed within control of service station personnel.

(iii) Apparatus dispensing Class I liquids into the fuel tanks of motor vehicles of the public shall not be located at a bulk plant unless separated by a fence or similar barrier from the area in which bulk operations are conducted.

(iv) The provisions of subsection (1) of this section shall not prohibit the dispensing of flammable liquids in the open from a tank vehicle to a motor vehicle. Such dispensing shall be permitted provided:

(A) The tank vehicle complies with the requirements covered in the Standard on Tank Vehicles for Flammable Liquids, NFPA 385-1966.

(B) The dispensing is done on premises not open to the public.

(C) The dispensing hose does not exceed 50 feet in length.

(D) The dispensing nozzle is a listed automatic-closing type without a latch-open device.

(vi) Class I liquids shall not be stored or handled within a building having a basement or pit into which flammable vapors may travel, unless such area is provided with ventilation designed to prevent the accumulation of flammable vapors therein.

(vii) Accurate inventory records shall be maintained and reconciled on all Class I liquid storage tanks for possible indication of leakage from tanks or piping.

(b) Special enclosures.

(i) When installation of tanks in accordance with WAC 296-24-33005(3) is impractical because of property or building limitations, tanks for flammable or combustible liquids may be installed in buildings if properly enclosed.

(ii) The enclosure shall be substantially liquid and vaportight without backfill. Sides, top, and bottom of the enclosure shall be of reinforced concrete at least 6 inches thick, with openings for inspection through the top only. Tank connections shall be so piped or closed that neither vapors nor liquid can escape into the enclosed space. Means shall be provided whereby portable equipment may be employed to discharge to the outside any liquid or vapors which might accumulate should leakage occur.

(iii) At automotive service stations provided in connection with tenant or customer parking facilities at or below grade level in large buildings of commercial, mercantile, or residential occupancy, tanks containing Class I liquids, installed of necessity in accordance with subsection (1)(b)(ii) of this section, shall not exceed 6,000 gallons individual or 18,000 gallons aggregate capacity.

(c) Inside buildings.

(i) Except where stored in tanks as provided in subsection (1)(b) of this section, no Class I liquids shall be stored within any service station building except in closed containers of aggregate capacity not exceeding 60

gallons. One container not exceeding 60 gallons capacity equipped with an approved pump is permitted.

(ii) Class I liquids may be transferred from one container to another in lubrication or service rooms of a service station building provided the electrical installation complies with Table H–19 and provided that any heating equipment complies with subsection (5) of this section.

(iii) Class II and Class III liquids may be stored and dispensed inside service station buildings from tanks of not more than 120 gallons capacity each.

(d) Labeling. No sale or purchase of any Class I, II, or III liquids shall be made in containers unless such containers are clearly marked with the name of the product contained therein.

(e) Dispensing into portable containers. No delivery of any Class I liquids shall be made into portable containers unless the container is constructed of metal, has a tight closure with screwed or spring cover, and is fitted with a spout or so designed that the contents can be poured without spilling.

(2) Dispensing systems.

(a) Location. Dispensing devices at automotive service stations shall be so located that all parts of the vehicle being served will be on the premises of the service station.

(b) Inside location. Approved dispensing units may be located inside of buildings. The dispensing area shall be separated from other areas in an approved manner. The dispensing unit and its piping shall be mounted either on a concrete island or protected against collision damage by suitable means and shall be located in a position where it cannot be struck by a vehicle descending a ramp or other slope out of control. The dispensing area shall be provided with an approved mechanical or gravity ventilation system. When dispensing units are located below grade, only approved mechanical ventilation shall be used and the entire dispensing area shall be protected by an approved automatic sprinkler system. Ventilating systems shall be electrically interlocked with gasoline dispensing units so that the dispensing units cannot be operated unless the ventilating fan motors are energized.

(c) Emergency power cutoff. A clearly identified and easily accessible switch(es) or a circuit breaker(s) shall be provided at a location remote from dispensing devices, including remote pumping systems, to shut off the power to all dispensing devices in the event of an emergency.

(d) Dispensing units.

(i) Class I liquids shall be transferred from tanks by means of fixed pumps so designed and equipped as to allow control of the flow and to prevent leakage or accidental discharge.

(ii) Only listed devices may be used for dispensing Class I liquids. No such device may be used if it shows evidence of having been dismantled.

(iii) Every dispensing device for Class I liquids installed after December 31, 1978, shall contain evidence of listing so placed that any attempt to dismantle the device will result in damage to such evidence, visible without disassembly or dismounting of the nozzle.

(iv) Class I liquids shall not be dispensed by pressure from drums, barrels, and similar containers. Approved pumps taking suction through the top of the container or approved self–closing faucets shall be used.

(v) The dispensing units, except those attached to containers, shall be mounted either on a concrete island or protected against collision damage by suitable means.

(e) Remote pumping systems.

(i) This subdivision shall apply to systems for dispensing Class I liquids where such liquids are transferred from storage to individual or multiple dispensing units by pumps located elsewhere than at the dispensing units.

(ii) Pumps shall be designed or equipped so that no part of the system will be subjected to pressures above its allowable working pressure. Pumps installed above grade, outside of buildings, shall be located not less than 10 feet from lines of adjoining property which is/or may be built upon, and not less than 5 feet from any building opening. When an outside pump location is impractical, pumps may be installed inside of buildings, as provided for dispensers in (b) of this subsection, or in pits as provided in (e)(iii) of this subsection. Pumps shall be substantially anchored and protected against physical damage by vehicles.

(iii) Pits for subsurface pumps or piping manifolds of submersible pumps shall withstand the external forces to which they may be subjected without damage to the pump, tank, or piping. The pit shall be no larger than necessary for inspection and maintenance and shall be provided with a fitted cover.

(iv) A control shall be provided that will permit the pump to operate only when a dispensing nozzle is removed from its bracket on the dispensing unit and the switch on this dispensing unit is manually actuated. This control shall also stop the pump when all nozzles have been returned to their brackets.

(v) An approved impact valve, incorporating a fusible link, designed to close automatically in the event of severe impact or fire exposure shall be properly installed in the dispensing supply line at the base of each individual dispensing device.

(vi) Testing. After the completion of the installation, including any paving, that section of the pressure piping system between the pump discharge and the connection for the dispensing facility shall be tested for at least 30 minutes at the maximum operating pressure of the system. Such tests shall be repeated at 5–year intervals thereafter.

(f) Delivery nozzles.

(i) A listed manual or automatic–closing type hose nozzle valve shall be provided on dispensers used for the dispensing of Class I liquids.

(ii) Manual–closing type valves shall be held open manually during dispensing. Automatic–closing type valves may be used in conjunction with an approved latch–open device.

(g) Special type dispensers.

(i) Emergency controls shall be installed at an acceptable location, but controls shall not be more than 100 feet from dispensers.

(ii) Instructions for the operation of dispensers shall be conspicuously posted.

(3) Marine service stations.

(a) Dispensing.

(i) The dispensing area shall be located away from other structures so as to provide room for safe ingress and egress of craft to be fueled. Dispensing units shall in all cases be at least 20 feet from any activity involving fixed sources of ignition.

(ii) Dispensing shall be by approved dispensing units with or without integral pumps and may be located on open piers, wharves, or floating docks or on shore or on piers of the solid fill type.

(iii) Dispensing nozzles shall be automatic-closing without a hold-open latch.

(b) Tanks and pumps.

(i) Tanks, and pumps not integral with the dispensing unit, shall be on shore or on a pier of the solid fill type, except as provided below.

(ii) Where shore location would require excessively long supply lines to dispensers, tanks may be installed on a pier provided that applicable portions of WAC 296-24-33005 relative to spacing, diking, and piping are complied with and the quantity so stored does not exceed 1,100 gallons aggregate capacity.

(iii) Shore tanks supplying marine service stations may be located above ground, where rock ledges or high water table make underground tanks impractical.

(iv) Where tanks are at an elevation which would produce gravity head on the dispensing unit, the tank outlet shall be equipped with a pressure control valve positioned adjacent to and outside the tank block valve specified in WAC 296-24-33005 (2)(h)(ii), so adjusted that liquid cannot flow by gravity from the tank in case of piping or hose failure.

(c) Piping.

(i) Piping between shore tanks and dispensing units shall be as described in WAC 296-24-33007, except that, where dispensing is from a floating structure, suitable lengths of oil-resistant flexible hose may be employed between the shore piping and the piping on the floating structure as made necessary by change in water level or shoreline.

(ii) A readily accessible valve to shut off the supply from shore shall be provided in each pipeline at or near the approach to the pier and at the shore end of each pipeline adjacent to the point where flexible hose is attached.

(iii) Piping shall be located so as to be protected from physical damage.

(iv) Piping handling Class I liquids shall be grounded to control stray currents.

(4) Electrical equipment.

(a) Application. This subsection shall apply to areas where Class I liquids are stored or handled. For areas where Class II or Class III liquids are stored or handled the electrical equipment may be installed in accordance with the provisions of WAC 296-24-956 through 296-24-960 for ordinary locations.

(b) All electrical equipment and wiring shall be of a type specified by and shall be installed in accordance with WAC 296-24-956 through 296-24-960.

(c) So far as it applies, Table H-19 shall be used to delineate and classify hazardous areas for the purpose of installation of electrical equipment under normal circumstances. A classified area shall not extend beyond an unpierced wall, roof, or other solid partition.

(d) The area classifications listed shall be based on the assumption that the installation meets the applicable requirements of this section in all respects.

TABLE H-19

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—SERVICE STATIONS

Location	NEC Class 1, Group D division	Extent of classified area
Underground tank:		
Fill opening	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
	2	Up to 18 inches above grade level within a horizontal radius of 10 feet from a loose fill connection and within a horizontal radius of 5 feet from a tight fill connection.
Vent—Discharging upward	1	Within 3 feet of open end of vent, extending in all directions.
	2	Area between 3 feet and 5 feet of open end of vent, extending in all directions.
Dispenser:		
Pits	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
Dispenser enclosure	1	The area 4 feet vertically above base within the enclosure and 18 inches horizontally in all directions.
Outdoor	2	Up to 18 inches above grade level within 20 feet horizontally of any edge of enclosure.
Indoor:		
With mechanical ventilation	2	Up to 18 inches above grade or floor level within 20 feet horizontally of any edge of enclosure.
With gravity ventilation	2	Up to 18 inches above grade or floor level within 25 feet horizontally of any edge of enclosure.

TABLE H-19

ELECTRICAL EQUIPMENT HAZARDOUS AREAS—SERVICE STATIONS

Location	NEC Class 1, Group D division	Extent of classified area
Remote pump—Outdoor	1	Any pit, box or space below grade level if any part is within a horizontal distance of 10 feet from any edge of pump.
	2	Within 3 feet of any edge of pump, extending in all directions. Also up to 18 inches above grade level within 10 feet horizontally from any edge of pump.
Remote pump—Indoor	1	Entire area within any pit.
	2	Within 5 feet of any edge of pump, extending in all directions. Also up to 3 feet above floor or grade level within 25 feet horizontally from any edge of pump.
Lubrication or service room	1	Entire area within any pit.
	2	Area up to 18 inches above floor or grade level within entire lubrication room.
Dispenser for Class I liquids	2	Within 3 feet of any fill or dispensing point, extending in all directions.
Special enclosure inside building per WAC 296-24-33013 (1)(b)	1	Entire enclosure.
Sales, storage and rest rooms	Ordinary	If there is any opening to these rooms within the extent of a Division 1 area, the entire room shall be classified as Division 1.

(5) Heating equipment.

(a) Conformance. Heating equipment shall be installed as provided in (b) through (e) of this subsection.

(b) Application. Heating equipment may be installed in the conventional manner in an area except as provided in (c), (d) or (e) of this subsection.

(c) Special room. Heating equipment may be installed in a special room separated from an area classified by Table H-19 by walls having a fire resistance rating of at least 1 hour and without any openings in the walls within 8 feet of the floor into an area classified in Table H-19. This room shall not be used for combustible storage and all air for combustion purposes shall come from outside the building.

(d) Work areas. Heating equipment using gas or oil fuel may be installed in the lubrication, sales, or service room where there is no dispensing or transferring of Class I liquids provided the bottom of the combustion chamber is at least 18 inches above the floor and the heating equipment is protected from physical damage by vehicles. Heating equipment using gas or oil fuel listed for use in garages may be installed in the lubrication or service room where Class I liquids are dispensed provided the equipment is installed at least 8 feet above the floor.

(e) Electric heat. Electrical heating equipment shall conform to subsection (4) of this section.

(6) Drainage and waste disposal. Provision shall be made in the area where Class I liquids are dispensed to prevent spilled liquids from flowing into the interior of service station buildings. Such provision may be by grading driveways, raising door sills, or other equally effective means. Crankcase drainings and flammable or combustible liquids shall not be dumped into sewers but shall be stored in tanks or drums outside of any building until removed from the premises.

(7) Sources of ignition. In addition to the previous restrictions of this section, the following shall apply: There shall be no smoking or open flames in the areas used for fueling, servicing fuel systems for internal combustion engines, receiving or dispensing of flammable or combustible liquids. Conspicuous and legible signs prohibiting smoking shall be posted within sight of the customer being served. The motors of all equipment being fueled shall be shut off during the fueling operation.

(8) Fire control. Each service station shall be provided with at least one fire extinguisher having a minimum approved classification of 6 B, C located so that an extinguisher will be within 75 feet of each pump, dispenser, underground fill pipe opening, and lubrication or service room.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33015, filed 4/19/85; 83-24-013 (Order 83-34), § 296-24-33015, filed 11/30/83; Order 76-6, § 296-24-33015, filed 3/1/76; Order 73-5, § 296-24-33015, filed 5/9/73 and Order 73-4, § 296-24-33015, filed 5/7/73.]

WAC 296-24-33017 Processing plants. (1) Scope. This section shall apply to those plants or buildings which contain chemical operations such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes but shall not apply to chemical plants, refineries or distilleries.

(2) Location.

(a) Classification. The location of each processing vessel shall be based upon its flammable or combustible liquid capacity. Processing vessels shall be located, with respect to distances to lines of adjoining property which may be built upon, in accordance with Table H-20, except when the processing plant is designed in accordance with (2)(b) of this section.

TABLE H-20

Processing vessels with emergency relief venting to permit pressure	Stable liquids	Unstable liquids
Not in excess of 2.5 p.s.i.g.	Table H-9	2 1/2 times Table H-9.
Over 2.5. p.s.i.g.	1 1/2 times Table H-9.	4 times Table H-9.

(b) Exception. The distances required in (2)(a) of this section may be waived when the vessels are housed within a building and the exterior wall facing the line of adjoining property which may be built upon is a blank wall having a fire-resistance rating of not less than 4 hours. When Class IA or unstable liquids are handled, the blank wall shall have explosion resistance in accordance with good engineering practice, see (3)(d) of this section.

(3) Processing building.

(a) Construction.

(i) Processing buildings shall be of fire-resistance or noncombustible construction, except heavy timber construction with load-bearing walls may be permitted for plants utilizing only stable Class II or Class III liquids. Except as provided in (2)(b) of this section or in the case of explosion resistant walls used in conjunction with explosion relieving facilities, see (3)(d) of this section, loadbearing walls are prohibited. Buildings shall be without basements or covered pits.

(ii) Areas shall have adequate exit facilities arranged to prevent occupants from being trapped in the event of fire. Exits shall not be exposed by the drainage facilities described in (3)(b) of this section.

(b) Drainage.

(i) Emergency drainage systems shall be provided to direct flammable or combustible liquid leakage and fire protection water to a safe location. This may require curbs, scuppers, or special drainage systems to control the spread of fire, see WAC 296-24-33005 (2)(g)(ii).

(ii) Emergency drainage systems, if connected to public sewers or discharged into public waterways, shall be equipped with traps or separators.

(iii) The processing plant shall be designed and operated to prevent the normal discharge of flammable or combustible liquids to public waterways, public sewers, or adjoining property.

(c) Ventilation.

(i) Enclosed processing buildings shall be ventilated at a rate of not less than 1 cubic foot per minute per square foot of solid floor area. This shall be accomplished by natural or mechanical ventilation with discharge or exhaust to a safe location outside of the building. Provision shall be made for introduction of makeup air in such a manner as not to short circuit the ventilation. Ventilation shall be arranged to include all floor areas or pits where flammable vapors may collect.

(ii) Equipment used in a building and the ventilation of the building shall be designed so as to limit flammable vapor-air mixtures under normal operating conditions to the interior of equipment, and to not more than 5 feet from equipment which exposes Class I liquids to the air. Examples of such equipment are dispensing stations, open centrifuges, plate and frame filters, open vacuum filters, and surfaces of open equipment.

(d) Explosion relief. Areas where Class IA or unstable liquids are processed shall have explosion venting through one or more of the following methods:

(i) Open air construction.

(ii) Lightweight walls and roof.

(iii) Lightweight wall panels and roof hatches.

(iv) Windows of explosion venting type.

(4) Liquid handling.

(a) Storage.

(i) The storage of flammable or combustible liquids in tanks shall be in accordance with the applicable provisions of WAC 296-24-33005.

(ii) If the storage of flammable or combustible liquids in outside aboveground or underground tanks is not practical because of temperature or production considerations, tanks may be permitted inside of buildings or structures in accordance with the applicable provisions of WAC 296-24-33005.

(iii) Storage tanks inside of buildings shall be permitted only in areas at or above grade which have adequate drainage and are separated from the processing area by construction having a fire resistance rating of at least 2 hours.

(iv) The storage of flammable or combustible liquids in containers shall be in accordance with the applicable provisions of WAC 296-24-33009.

(b) Piping, valves, and fittings.

(i) Piping, valves, and fittings shall be in accordance with WAC 296-24-33007.

(ii) Approved flexible connectors may be used where vibration exists or where frequent movement is necessary. Approved hose may be used at transfer stations.

(iii) Piping containing flammable or combustible liquids shall be identified.

(c) Transfer.

(i) The transfer of large quantities of flammable or combustible liquids shall be through piping by means of pumps or water displacement. Except as required in process equipment, gravity flow shall not be used. The use of compressed air as a transferring medium is prohibited.

(ii) Positive displacement pumps shall be provided with pressure relief discharging back to the tank or to pump suction.

(d) Equipment.

(i) Equipment shall be designed and arranged to prevent the unintentional escape of liquids and vapors and to minimize the quantity escaping in the event of accidental release.

(ii) Where the vapor space of equipment is usually within the flammable range, the probability of explosion damage to the equipment can be limited by inerting, by providing an explosion suppression system, or by designing the equipment to contain the peak explosion pressure which may be modified by explosion relief. Where the special hazards of operation, sources of ignition, or exposures indicate a need, consideration shall be given to providing protection by one or more of the above means.

(5) Tank vehicle and tank car loading and unloading. Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings, or nearest line of adjoining property which may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class II and Class III liquids measured from the nearest position of any fill stem. Buildings for pumps or shelters for personnel may be a part of the facility. Operations of the facility shall comply with the appropriate portions of WAC 296-24-33013(3).

(6) Fire control.

(a) Portable extinguishers. Approved portable fire extinguishers of appropriate size, type and number shall be provided.

(b) Other controls. Where the special hazards of operation or exposure indicate a need, the following fire control provision shall be provided.

(i) A reliable water supply shall be available in pressure and quantity adequate to meet the probable fire demands.

(ii) Hydrants shall be provided in accordance with accepted good practice.

(iii) Hose connected to a source of water shall be installed so that all vessels, pumps, and other equipment containing flammable or combustible liquids can be reached with at least one hose stream. Nozzles that are capable of discharging a water spray shall be provided.

(iv) Processing plants shall be protected by an approved automatic sprinkler system or equivalent extinguishing system. If special extinguishing systems including but not limited to those employing foam, carbon dioxide, or dry chemical are provided, approved equipment shall be used and installed in an approved manner.

(c) Alarm systems. An approved means for prompt notification of fire to those within the plant and any public fire department available shall be provided. It may be advisable to connect the plant system with the public system where public fire alarm system is available.

(d) Maintenance. All plant fire protection facilities shall be adequately maintained and periodically inspected and tested to make sure they are always in satisfactory operating condition and that they will serve their purpose in time of emergency.

(7) Sources of ignition.

(a) General.

(i) Precautions shall be taken to prevent the ignition of flammable vapors. Sources of ignition include but are not limited to open flames; lightning; smoking; cutting and welding; hot surfaces; frictional heat; static, electrical, any mechanical sparks; spontaneous ignition, including heat-producing chemical reactions; and radiant heat.

(ii) Class I liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. Where the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire, the provisions of this section shall be deemed to have been complied with.

(b) Maintenance and repair.

(i) When necessary to do maintenance work in a flammable or combustible liquid processing area, the work shall be authorized by a responsible representative of the employer.

(ii) Hot work such as welding or cutting operations, use of spark-producing power tools, and chipping operations shall be permitted only under supervision of an individual in responsible charge who shall make an inspection of the area to be sure that it is safe for the work to be done and that safe procedures will be followed for the work specified.

(c) Electrical.

(i) All electrical wiring and equipment within storage or processing areas shall be installed in accordance with nationally recognized good practice.

(ii) Locations where flammable vapor-air mixtures may exist under normal operations shall be classified Class I, Division 1 according to the requirements of WAC 296-24-956 through 296-24-960. For those pieces of equipment installed in accordance with (3)(c)(ii) of this section, the Division 1 area shall extend 5 feet in all directions from all points of vapor liberation. All areas within pits shall be classified Division 1 if any part of the pit is within a Division 1 or 2 classified area, unless the pit is provided with mechanical ventilation.

(iii) Locations where flammable vapor-air mixtures may exist under abnormal conditions and for a distance beyond Division 1 locations shall be classified Division 2 according to the requirements of WAC 296-24-956 through 296-24-960. These locations include an area within 20 feet horizontally, 3 feet vertically beyond a Division 1 area, and up to 3 feet above floor or grade level within 25 feet, if indoors, or 10 feet if outdoors, from any pump, bleeder, withdrawal fittings, meter, or similar device handling Class I liquids. Pits provided with adequate mechanical ventilation within a Division 1 or 2 area shall be classified Division 2. If Class II or Class III liquids only are handled, then ordinary electrical equipment is satisfactory though care shall be used in locating electrical apparatus to prevent hot metal from falling into open equipment.

(iv) Where the provisions of (7)(c)(i), (ii), and (iii) of this section require the installation of explosion-proof equipment, ordinary electrical equipment including switchgear may be used if installed in a room or enclosure which is maintained under positive pressure with respect to the hazardous area. Ventilation makeup air shall be uncontaminated by flammable vapors.

(8) Housekeeping.

(a) General. Maintenance and operating practices shall be in accordance with established procedures which will tend to control leakage and prevent the accidental escape of flammable or combustible liquids. Spills shall be cleaned up promptly.

(b) Access. Adequate aisles shall be maintained for unobstructed movement of personnel and so that fire protection equipment can be brought to bear on any part of the processing equipment.

(c) Waste and residues. Combustible waste material and residues in a building or operating area shall be kept to a minimum, stored in closed metal waste cans, and disposed of daily.

(d) Clear zone. Ground area around buildings and operating areas shall be kept free of tall grass, weeds, trash, or other combustible materials.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-33017, filed 4/19/85; Order 76-6, § 296-24-33017, filed 3/1/76; Order 73-5, § 296-24-33017, filed 5/9/73 and Order 73-4, § 296-24-33017, filed 5/7/73.]

WAC 296-24-33019 Refineries, chemical plants, and distilleries. (1) Storage tanks. Flammable or combustible liquids shall be stored in tanks, in containers, or in portable tanks. Tanks shall be installed in accordance with WAC 296-24-33005. Tanks for the storage of flammable or combustible liquids in tank farms and in locations other than process areas shall be located in accordance with WAC 296-24-33005 (2)(a) and (b).

(2) Wharves. Wharves handling flammable or combustible liquids shall be in accordance with WAC 296-24-33013(4).

(3) Fired and unfired pressure vessels.

(a) Fired vessels. Fired pressure vessels shall be constructed in accordance with the Code for Fired Pressure Vessels, section I of the ASME Boiler and Pressure Vessel Code—1968.

(b) Unfired vessels shall be constructed in accordance with the Code for Unfired Pressure Vessels, section VIII of the ASME Boiler and Pressure Vessel Code—1968.

(4) Location of process units. Process units shall be located so that they are accessible from at least one side for the purpose of fire control. Where topographical conditions are such that flammable or combustible liquids may flow from a processing area so as to constitute a fire hazard to property of others, provision shall be made to divert or impound the flow by curbs, drains, or other suitable means.

(5) Fire control.

(a) Portable equipment. Portable fire extinguishment and control equipment shall be provided in such quantities and types as are needed for the special hazards of operation and storage.

(b) Water supply. Water shall be available in volume and at adequate pressure to supply water hose streams, foam producing equipment, automatic sprinklers, or water spray systems as the need is indicated by the special hazards of operation and storage.

(c) Special equipment. Special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical shall be provided as the need is indicated by the special hazards of operation and storage.

[Order 73-5, § 296-24-33019, filed 5/9/73 and Order 73-4, § 296-24-33019, filed 5/7/73.]

WAC 296-24-370 Spray finishing using flammable and combustible materials.

[Order 73-5, § 296-24-370, filed 5/9/73 and Order 73-4, § 296-24-370, filed 5/7/73.]

WAC 296-24-37001 Definitions. (1) Aerated solid powders. Aerated powders shall mean any powdered material used as a coating material which shall be fluidized within a container by passing air uniformly from below. It is common practice to fluidize such materials to form a fluidized powder bed and then dip the part to be coated into the bed in a manner similar to that used in liquid dipping. Such beds are also used as sources for powder spray operations.

(2) Spraying area. Any area in which dangerous quantities of flammable vapors or mists, or combustible residues, dusts, or deposits are present due to the operation of spraying processes.

(3) Spray booth. A power-ventilated structure provided to enclose or accommodate a spraying operation to confine and limit the escape of spray, vapor, and residue, and to safely conduct or direct them to an exhaust system.

(4) Waterwash spray booth. A spray booth equipped with a water washing system designed to minimize dusts or residues entering exhaust ducts and to permit the recovery of overspray finishing material.

(5) Dry spray booth. A spray booth not equipped with a water washing system as described in (4) of this section. A dry spray booth may be equipped with (a) distribution or baffle plates to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct; or (b) overspray dry filters to minimize dusts; or (c) overspray dry filters to minimize dusts or residues entering exhaust ducts; or (d) overspray dry filter rolls designed to minimize dusts or residues entering exhaust ducts; or (e) where dry powders are being sprayed, with powder collection systems so arranged in the exhaust to capture oversprayed material.

(6) Fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material through which the preheated object to be coated is immersed and transported.

(7) Electrostatic fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material which is electrically charged with a charge opposite to the charge of the object to be coated; such object is transported through the container immediately above the charged and aerated materials in order to be coated.

(8) Approved. Shall mean approved and listed by the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp.

(9) Listed. See "approved" in WAC 296-24-37001(8).

[Order 76-6, § 296-24-37001, filed 3/1/76; Order 73-5, § 296-24-37001, filed 5/9/73 and Order 73-4, § 296-24-37001, filed 5/7/73.]

WAC 296-24-37003 Spray booths. (1) Construction. Spray booths shall be substantially constructed of steel, securely and rigidly supported, or of concrete or masonry except that aluminum or other substantial noncombustible material may be used for intermittent or low volume spraying. Spray booths shall be designed to sweep air currents toward the exhaust outlet.

(2) Interiors. The interior surfaces of spray booths shall be smooth and continuous without edges and otherwise designed to prevent pocketing of residues and facilitate cleaning and washing without injury.

(3) Floors. The floor surface of a spray booth and operator's working area, if combustible, shall be covered with noncombustible material of such character as to facilitate the safe cleaning and removal of residues.

(4) Distribution or baffle plates. Distribution or baffle plates, if installed to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct, shall be of noncombustible material and readily removable or accessible on both sides for cleaning. Such plates shall not be located in exhaust ducts.

(5) Dry type overspray collectors—(Exhaust air filters). In conventional dry type spray booths, overspray dry filters or filter rolls, if installed, shall conform to the following:

(a) The spraying operations except electrostatic spraying operations shall be so designed, installed and maintained that the average air velocity over the open face of the booth (or booth cross section during spraying operations) shall be not less than 100 linear feet per minute. Electrostatic spraying operations may be conducted with an air velocity over the open face of the booth of not less than 60 linear feet per minute, or more, depending on the volume of the finishing material being applied and its flammability and explosion characteristics. Visible gauges or audible alarm or pressure activated devices shall be installed to indicate or insure that the required air velocity is maintained. Dry spray booths equipped with a filter roll which is automatically advanced when the air velocity is reduced to that specified in this section should be arranged to cause shutdown of spraying operations if the filter roll fails to advance automatically. Maintenance procedures should be established to assure replacing filter pads before excessive restriction to airflow occurs. Filter pads should be inspected after each period of use and clogged filter pads discarded and replaced. Filter rolls shall be inspected to insure proper replacement of filter media.

(b) All discarded filter pads and filter rolls shall be immediately removed to a safe, well-detached location or placed in a water-filled metal container and disposed of at the close of the day's operation unless maintained completely in water.

(c) The location of filters in a spray booth shall be so as to not reduce the effective booth enclosure of the articles being sprayed.

(d) Space within the spray booth on the downstream and upstream sides of filters shall be protected with approved automatic sprinklers.

(e) Filters or filter rolls shall not be used when applying a spray material known to be highly susceptible to spontaneous heating and ignition.

(f) Clean filters or filter rolls shall be noncombustible or of a type having a combustibility not in excess of Class 2 filters as listed by Underwriters' Laboratories, Inc. Filters and filter rolls shall not be alternately used for different types of coating materials, where the combination of materials may be conducive to spontaneous ignition. See also WAC 296-24-37013(6).

(6) Frontal area. Each spray booth having a frontal area larger than 9 square feet shall have a metal deflector or curtain not less than 2 1/2 inches deep installed at the upper outer edge of the booth over the opening.

(7) Conveyors. Where conveyors are arranged to carry work into or out of spray booths, the openings therefor shall be as small as practical.

(8) Separation of operations. Each spray booth shall be separated from other operations by not less than 3 feet, or by a greater distance, or by such partition or wall as to reduce the danger from juxtaposition of hazardous operations. See also WAC 296-24-37005(1).

(9) Cleaning. Spray booths shall be so installed that all portions are readily accessible for cleaning. A clear space of not less than 3 feet on all sides shall be kept free from storage or combustible construction.

(10) Illumination. When spraying areas are illuminated through glass panels or other transparent materials, only fixed lighting units shall be used as a source of illumination. Panels shall effectively isolate the spraying area from the area in which the lighting unit is located, and shall be of a noncombustible material of such a nature or so protected that breakage will be unlikely. Panels shall be so arranged that normal accumulations of residue on the exposed surface of the panel will not be raised to a dangerous temperature by radiation or conduction from the source of illumination.

[Order 76-6, § 296-24-37003, filed 3/1/76; Order 73-5, § 296-24-37003, filed 5/9/73 and Order 73-4, § 296-24-37003, filed 5/7/73.]

WAC 296-24-37005 Electrical and other sources of ignition. (1) Conformance. All electrical equipment, open flames and other sources of ignition shall conform to the requirements of this section, except as follows:

(a) Electrostatic apparatus shall conform to the requirements of WAC 296-24-37015 and 296-24-37017.

(b) Drying, curing, and fusion apparatus shall conform to the requirements of WAC 296-24-37019.

(c) Automobile undercoating spray operations in garages shall conform to the requirements of WAC 296-24-37021.

(d) Powder coating equipment shall conform to the requirements of WAC 296-24-37023.

(2) Minimum separation. There shall be no open flame or spark producing equipment in any spraying

area nor within 20 feet thereof, unless separated by a partition.

(3) Hot surfaces. Space-heating appliances, steam-pipes, or hot surfaces shall not be located in a spraying area where deposits of combustible residues may readily accumulate.

(4) Wiring conformance. Electrical wiring and equipment shall conform to the provisions of this section and shall otherwise be in accordance with WAC 296-24-956 through 296-24-960.

(5) Combustible residues, areas. Unless specifically approved for locations containing both deposits of readily ignitable residue and explosive vapors, there shall be no electrical equipment in any spraying area, whereon deposits of combustible residues may readily accumulate, except wiring in rigid conduit or in boxes or fittings containing no taps, splices, or terminal connections.

(6) Wiring type approved. Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area as herein defined shall be of explosion-proof type approved for Class I, Group D locations and shall otherwise conform to the provisions of WAC 296-24-956 through 296-24-960, for Class I, Division 1, hazardous locations. Electrical wiring, motors, and other equipment outside of but within twenty feet of any spraying area, and not separated therefrom by partitions, shall not produce sparks under normal operating conditions and shall otherwise conform to the provisions of WAC 296-24-956 through 296-24-960 for Class I, Division 2, hazardous locations.

(7) Lamps. Electric lamps outside of, but within twenty feet of any spraying area, and not separated therefrom by a partition, shall be totally enclosed to prevent the falling of hot particles and shall be protected from mechanical injury by suitable guards or by location.

(8) Portable lamps. Portable electric lamps shall not be used in any spraying area during spraying operations. Portable electric lamps, if used during cleaning or repairing operations, shall be of the type approved for hazardous Class I locations.

(9) Grounding.

(a) All metal parts of spray booths, exhaust ducts, and piping systems conveying flammable or combustible liquids or aerated solids shall be properly electrically grounded in an effective and permanent manner.

(b) "Airless" high-fluid pressure spray guns and any conductive object being sprayed should be properly electrically grounded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37005, filed 4/19/85; Order 76-6, § 296-24-37005, filed 3/1/76; Order 73-5, § 296-24-37005, filed 5/9/73 and Order 73-4, § 296-24-37005, filed 5/7/73.]

WAC 296-24-37007 Ventilation. (1) Conformance. Ventilating and exhaust systems shall be in accordance with the Standard for Blower and Exhaust Systems for Vapor Removal, NFPA No. 91-1961, where applicable and shall also conform to the provisions of this section.

(2) General. All spraying areas shall be provided with mechanical ventilation adequate to remove flammable vapors, mists or powders to a safe location and to confine and control combustible residues so that life is not endangered. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and drying finishing material residue to be exhausted.

(3) Independent exhaust. Each spray booth shall have an independent exhaust duct system discharging to the exterior of the building, except that multiple cabinet spray booths in which identical spray finishing material is used with a combined frontal area of not more than 18 square feet may have a common exhaust. If more than one fan serves one booth, all fans shall be so interconnected that one fan cannot operate without all fans being operated.

(4) Fan-rotating element. The fan-rotating element shall be nonferrous or nonsparking or the casing shall consist of or be lined with such material. There shall be ample clearance between the fan-rotating element and the fan casing to avoid a fire by friction, necessary allowance being made for ordinary expansion and loading to prevent contact between moving parts and the duct or fan housing. Fan blades shall be mounted on a shaft sufficiently heavy to maintain perfect alignment even when the blades of the fan are heavily loaded, the shaft preferably to have bearings outside the duct and booth. All bearings shall be of the self-lubricating type, or lubricated from the outside duct.

(5) Electric motors. Electric motors driving exhaust fans shall not be placed inside booths or ducts. See also WAC 296-24-37005.

(6) Belts. Belts shall not enter the duct or booth unless the belt and pulley within the duct or booth are thoroughly enclosed.

(7) Exhaust ducts. Exhaust ducts shall be constructed of steel and shall be substantially supported. Exhaust ducts without dampers are preferred; however, if dampers are installed, they shall be maintained so that they will be in a full open position at all times the ventilating system is in operation.

(a) Exhaust ducts shall be protected against mechanical damage and have a clearance from unprotected combustible construction or other combustible material of not less than 18 inches.

(b) If combustible construction is provided with the following protection applied to all surfaces within 18 inches, clearances may be reduced to the distances indicated:

(i) 28-gage sheet metal on 1/4-inch 12 inches. asbestos mill board.

(ii) 28-gage sheet metal on 1/8-inch 9 inches. asbestos mill board spaced out 1 inch on noncombustible spacers.

(iii) 22-gage sheet metal on 1-inch 3 inches. rockwool batts reinforced with wire mesh or the equivalent.

(iv) Where ducts are protected with an approved automatic sprinkler system, properly maintained, the clearance required in (7)(a) of this section may be reduced to 6 inches.

(8) Discharge clearance. Unless the spray booth exhaust duct terminal is from a water–wash spray booth, the terminal discharge point shall be not less than 6 feet from any combustible exterior wall or roof nor discharge in the direction of any combustible construction or unprotected opening in any noncombustible exterior wall within 25 feet.

(9) Air exhaust. Air exhaust from spray operations shall not be directed so that it will contaminate makeup air being introduced into the spraying area or other ventilating intakes, nor directed so as to create a nuisance. Air exhausted from spray operations shall not be recirculated.

(10) Access doors. When necessary to facilitate cleaning, exhaust ducts shall be provided with an ample number of access doors.

(11) Room intakes. Air intake openings to rooms containing spray finishing operations shall be adequate for the efficient operation of exhaust fans and shall be so located as to minimize the creation of dead air pockets.

(12) Drying spaces. Freshly sprayed articles shall be dried only in spaces provided with adequate ventilation to prevent the formation of explosive vapors. In the event adequate and reliable ventilation is not provided such drying spaces shall be considered a spraying area. (See also WAC 296–24–37019.)

[Order 76–6, § 296–24–37007, filed 3/1/76; Order 73–5, § 296–24–37007, filed 5/9/73 and Order 73–4, § 296–24–37007, filed 5/7/73.]

WAC 296–24–37009 Flammable and combustible liquids—Storage and handling. (1) Conformance. The storage of flammable or combustible liquids in connection with spraying operations shall conform to the requirements of WAC 296–24–330, where applicable.

(2) Quantity. The quantity of flammable or combustible liquids kept in the vicinity of spraying operations shall be the minimum required for operations and should ordinarily not exceed a supply for 1 day or one shift. Bulk storage of portable containers of flammable or combustible liquids shall be in a separate, constructed building detached from other important buildings or cut off in a standard manner.

(3) Containers. Original closed containers, approved portable tanks, approved safety cans or a properly arranged system of piping shall be used for bringing flammable or combustible liquids into spray finishing room. Open or glass containers shall not be used.

(4) Transferring liquids. Except as provided in (5) of this section, the withdrawal of flammable and combustible liquids from containers having a capacity of greater than 60 gallons shall be by approved pumps. The withdrawal of flammable or combustible liquids from containers and the filling of containers, including portable mixing tanks, shall be done only in a suitable mixing room or in a spraying area when the ventilating system is in operation. Adequate precautions shall be taken to protect against liquid spillage and sources of ignition.

(5) Spraying containers. Containers supplying spray nozzles shall be of closed type or provided with metal covers kept closed. Containers not resting on floors shall be on metal supports or suspended by wire cables. Containers supplying spray nozzles by gravity flow shall not exceed 10 gallons capacity. Original shipping containers shall not be subject to air pressure for supplying spray nozzles. Containers under air pressure supplying spray nozzles shall be of limited capacity, not exceeding that necessary for 1 day's operation; shall be designed and approved for such use; shall be provided with a visible pressure gage; and shall be provided with a relief valve set to operate in conformance with the requirements of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code—1968. Containers under air pressure supplying spray nozzles, air–storage tanks and coolers shall conform to the standards of the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code—1968 for construction, tests, and maintenance.

(6) Pipes and hoses.

(a) All containers or piping to which is attached a hose or flexible connection shall be provided with a shutoff valve at the connection. Such valves shall be kept shut when spraying operations are not being conducted.

(b) When a pump is used to deliver products, automatic means shall be provided to prevent pressure in excess of the design working pressure of accessories, piping, and hose.

(c) All pressure hose and couplings shall be inspected at regular intervals appropriate to this service. The hose and couplings shall be tested with the hose extended, and using the "inservice maximum operating pressures." Any hose showing material deteriorations, signs of leakage, or weakness in its carcass or at the couplings, shall be withdrawn from service and repaired or discarded.

(d) Piping systems conveying flammable or combustible liquids shall be of steel or other material having comparable properties of resistance to heat and physical damage. Piping systems shall be properly bonded and grounded.

(7) Spray liquid heaters. Electrically powered spray liquid heaters shall be approved and listed for the specific location in which used (see WAC 296–24–37005). Heaters shall not be located in spray booths nor other locations subject to the accumulation of deposits or combustible residue. Agitators, if used, should preferably be driven by compressed air, water, or low–pressure steam. If an electric motor is used, (see WAC 296–24–37005).

(8) Pump relief. If flammable or combustible liquids are supplied to spray nozzles by positive displacement pumps, the pump discharge line shall be provided with an approved relief valve discharging to a pump suction or a safe detached location, or a device provided to stop the prime mover if the discharge pressure exceeds the safe operating pressure of the system.

(9) Grounding. Whenever flammable or combustible liquids are transferred from one container to another, both containers shall be effectively bonded and grounded to prevent discharge sparks of static electricity.

[Order 73–5, § 296–24–37009, filed 5/9/73 and Order 73–4, § 296–24–37009, filed 5/7/73.]

WAC 296-24-37011 Protection. (1) Conformance. In sprinklered buildings, the automatic sprinkler system in rooms containing spray finishing operations shall conform to the requirements of WAC 296-24-607. In unsprinklered buildings where sprinklers are installed only to protect spraying areas, the installation shall conform to such standards insofar as they are applicable. Sprinkler heads shall be located so as to provide water distribution throughout the entire booth.

(2) Valve access. Automatic sprinklers protecting each spray booth (together with its connecting exhaust) shall be under an accessibly located separate outside stem and yoke (OS&Y) subcontrol valve.

(3) Cleaning of heads. Sprinklers protecting spraying areas shall be kept as free from deposits as practical by cleaning daily if necessary. (See also WAC 296-24-37013.)

(4) Portable extinguishers. An adequate supply of suitable portable fire extinguishers shall be installed near all spraying areas.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-37011, filed 12/24/81; Order 73-5, § 296-24-37011, filed 5/9/73 and Order 73-4, § 296-24-37011, filed 5/7/73.]

WAC 296-24-37013 Operations and maintenance. (1) Spraying. Spraying shall not be conducted outside of predetermined spraying areas.

(2) Cleaning. All spraying areas shall be kept as free from the accumulation of deposits of combustible residues as practical, with cleaning conducted daily if necessary. Scrapers, spuds, or other such tools used for cleaning purposes shall be of nonsparking material.

(3) Residue disposal. Residue scrapings and debris contaminated with residue shall be immediately removed from the premises and properly disposed of. Approved metal waste cans shall be provided wherever rags or waste are impregnated with finishing material and all such rags or waste deposited therein immediately after use. The contents of waste cans shall be properly disposed of at least once daily or at the end of each shift.

(4) Clothing storage. Spray finishing employees' clothing shall not be left on the premises overnight unless kept in metal lockers.

(5) Cleaning solvents. The use of solvents for cleaning operations shall be restricted to those having flashpoints not less than 100°F; however, for cleaning spray nozzles and auxiliary equipment, solvents having flashpoints not less than those normally used in spray operations may be used. Such cleaning shall be conducted inside spray booths and ventilating equipment operated during cleaning.

(6) Hazardous materials combinations. Spray booths shall not be alternately used for different types of coating materials, where the combination of the materials may be conducive to spontaneous ignition, unless all deposits of the first used material are removed from the booth and exhaust ducts prior to spraying with the second used material.

(7) "No smoking" signs. "No smoking" signs in large letters on contrasting color background shall be conspicuously posted at all spraying areas and paint storage rooms. (See WAC 296-24-140.)

[Order 73-5, § 296-24-37013, filed 5/9/73 and Order 73-4, § 296-24-37013, filed 5/7/73.]

WAC 296-24-37015 Fixed electrostatic apparatus. (1) Conformance. Where installation and use of electrostatic spraying equipment is used, such installation and use shall conform to all other requirements contained in WAC 296-24-370 through 296-24-37027.

(2) Type approval. Electrostatic apparatus and devices used in connection with coating operations shall be of approved types.

(3) Location. Transformers, power packs, control apparatus, and all other electrical portions of the equipment, with the exception of high-voltage grids, electrodes, and electrostatic atomizing heads and their connections, shall be located outside of the spraying area, or shall otherwise conform to the requirements of WAC 296-24-37005.

(4) Support. Electrodes and electrostatic atomizing heads shall be adequately supported in permanent locations and shall be effectively insulated from the ground. Electrodes and electrostatic atomizing heads which are permanently attached to their bases, supports, or reciprocators, shall be deemed to comply with this section. Insulators shall be nonporous and noncombustible.

(5) Insulators, grounding. High-voltage leads to electrodes shall be properly insulated and protected from mechanical injury or exposure to destructive chemicals. Electrostatic atomizing heads shall be effectively and permanently supported on suitable insulators and shall be effectively guarded against accidental contact or grounding. An automatic means shall be provided for grounding the electrode system when it is electrically deenergized for any reason. All insulators shall be kept clean and dry.

(6) Safe distance. A safe distance shall be maintained between goods being painted and electrodes or electrostatic atomizing heads or conductors of at least twice the sparking distance. A suitable sign indicating this safe distance shall be conspicuously posted near the assembly.

(7) Conveyors required. Goods being painted using this process are to be supported on conveyors. The conveyors shall be so arranged as to maintain safe distances between the goods and the electrodes or electrostatic atomizing heads at all times. Any irregularly shaped or other goods subject to possible swinging or movement shall be rigidly supported to prevent such swinging or movement which would reduce the clearance to less than that specified in (6) of this section.

(8) Prohibition. This process is not acceptable where goods being coated are manipulated by hand. When finishing materials are applied by electrostatic equipment which is manipulated by hand, see WAC 296-24-37017 for applicable requirements. (Rev. 1-23-76)

(9) Fail-safe controls. Electrostatic apparatus shall be equipped with automatic controls which will operate

without time delay to disconnect the power supply to the high voltage transformer and to signal the operator under any of the following conditions:

(a) Stoppage of ventilating fans or failure of ventilating equipment from any cause.

(b) Stoppage of the conveyor carrying goods through the high voltage field.

(c) Occurrence of a ground or of an imminent ground at any point on the high voltage system.

(d) Reduction of clearance below that specified in (6) of this section.

(10) Guarding. Adequate booths, fencing, railings, or guards shall be so placed about the equipment that they, either by their location or character or both, assure that a safe isolation of the process is maintained from plant storage or personnel. Such railings, fencing, and guards shall be of conducting material, adequately grounded.

(11) Ventilation. Where electrostatic atomization is used the spraying area shall be so ventilated as to insure safe conditions from a fire and health standpoint.

(12) Fire protection. All areas used for spraying, including the interior of the booth, shall be protected by automatic sprinklers where this protection is available. Where this protection is not available, other approved automatic extinguishing equipment shall be provided.

[Order 76-6, § 296-24-37015, filed 3/1/76; Order 73-5, § 296-24-37015, filed 5/9/73 and Order 73-4, § 296-24-37015, filed 5/7/73.]

WAC 296-24-37017 Electrostatic hand spraying equipment. (1) Application. This section shall apply to any equipment using electrostatically charged elements for the atomization and/or, precipitation of materials for coatings on articles, or for other similar purposes in which the atomizing device is hand held and manipulated during the spraying operation.

(2) Conformance. Electrostatic hand spraying equipment shall conform with the other provisions of WAC 296-24-370 through 296-24-37027.

(3) Equipment approval and specifications. Electrostatic hand spray apparatus and devices used in connection with coating operations shall be of approved types. The equipment should be so designed that the maximum surface temperature of the equipment in the spraying area shall not exceed 150°F under any condition. The high voltage circuits shall be designed so as to not produce a spark of sufficient intensity to ignite any vapor-air mixtures nor result in appreciable shock hazard upon coming in contact with a grounded object under all normal operating conditions. The electrostatically charged exposed elements of the handgun shall be capable of being energized only by a switch which also controls the coating material supply.

(4) Electrical support equipment. Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of the handgun itself and its connections to the powder supply shall be located outside of the spraying area or shall otherwise conform to the requirements of WAC 296-24-37005.

(5) Spray gun ground. The handle of the spraying gun shall be electrically connected to ground by a metallic connection and to be so constructed that the operator in normal operating position is in intimate electrical contact with the grounded handle.

(6) Grounding—General. All electrically conductive objects in the spraying area shall be adequately grounded. This requirement shall apply to paint containers, wash cans, and any other objects or devices in the area. The equipment shall carry a prominent permanently installed warning regarding the necessity for this grounding feature.

(7) Maintenance of grounds. Objects being painted or coated shall be maintained in metallic contact with the conveyor or other grounded support. Hooks shall be regularly cleaned to insure this contact and areas of contact shall be sharp points or knife edges where possible. Points of support of the object shall be concealed from random spray where feasible and where the objects being sprayed are supported from a conveyor, the point of attachment to the conveyor shall be so located as to not collect spray material during normal operation.

(8) Interlocks. The electrical equipment shall be so interlocked with the ventilation of the spraying area that the equipment cannot be operated unless the ventilation fans are in operation.

(9) Ventilation. The spraying operation shall take place within a spray area which is adequately ventilated to remove solvent vapors released from the operation.

[Order 73-5, § 296-24-37017, filed 5/9/73 and Order 73-4, § 296-24-37017, filed 5/7/73.]

WAC 296-24-37019 Drying, curing, or fusion apparatus. (1) Conformance. Drying, curing, or fusion apparatus in connection with spray application of flammable and combustible finishes shall conform to the Standard for Ovens and Furnaces, NFPA 86A-1969, where applicable and shall also conform with the following requirements of this section.

(2) Alternate use prohibited. Spray booths, rooms, or other enclosures used for spraying operations shall not alternately be used for the purpose of drying by any arrangement which will cause a material increase in the surface temperature of the spray booth, room, or enclosure.

(3) Adjacent system interlocked. Except as specifically provided in (4) of this section, drying, curing, or fusion units utilizing a heating system having open flames or which may produce sparks shall not be installed in a spraying area, but may be installed adjacent thereto when equipped with an interlocked ventilating system arranged to:

(a) Thoroughly ventilate the drying space before the heating system can be started;

(b) Maintain a safe atmosphere at any source of ignition;

(c) Automatically shut down the heating system in the event of failure of the ventilating system.

(4) Alternate use permitted. Automobile refinishing spray booths or enclosures, otherwise installed and

maintained in full conformity with this section, may alternately be used for drying with portable electrical infrared drying apparatus when conforming with the following:

(a) Interior (especially floors) of spray enclosures shall be kept free of overspray deposits.

(b) During spray operations, the drying apparatus and electrical connections and wiring thereto shall not be located within spray enclosure nor in any other location where spray residues may be deposited thereon.

(c) The spraying apparatus, the drying apparatus, and the ventilating system of the spray enclosure shall be equipped with suitable interlocks so arranged that:

(i) The spraying apparatus cannot be operated while the drying apparatus is inside the spray enclosure.

(ii) The spray enclosure will be purged of spray vapors for a period of not less than 3 minutes before the drying apparatus can be energized.

(iii) The ventilating system will maintain a safe atmosphere within the enclosure during the drying process and the drying process apparatus will automatically shut off in the event of failure of the ventilating system.

(d) All electrical wiring and equipment of the drying apparatus shall conform with the applicable sections of WAC 296-24-956 through 296-24-960. Only equipment of a type approved for Class I, Division 2 hazardous locations shall be located within 18 inches of floor level. All metallic parts of the drying apparatus shall be properly electrically bonded and grounded.

(e) The drying apparatus shall contain a prominently located, permanently attached warning sign indicating that ventilation should be maintained during the drying period and that spraying should not be conducted in the vicinity that spray will deposit on apparatus.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37019, filed 4/19/85; Order 76-6, § 296-24-37019, filed 3/1/76; Order 73-5, § 296-24-37019, filed 5/9/73 and Order 73-4, § 296-24-37019, filed 5/7/73.]

WAC 296-24-37021 Automobile undercoating in garages. Automobile undercoating spray operations in garages, conducted in areas having adequate natural or mechanical ventilation, are exempt from the requirements pertaining to spray finishing operations, when using undercoating materials not more hazardous than kerosene (as listed by Underwriters' Laboratories in respect to fire hazard rating 30-40) or undercoating materials using only solvents listed as having a flash point in excess of 100°F. Undercoating spray operations not conforming to these provisions are subject to all requirements of WAC 296-24-370 through 296-24-37027, pertaining to spray finishing operations.

[Order 73-5, § 296-24-37021, filed 5/9/73 and Order 73-4, § 296-24-37021, filed 5/7/73.]

WAC 296-24-37023 Powder coating. (1) Electrical and other sources of ignition. Electrical equipment and other sources of ignition shall conform to the requirements of WAC 296-24-37005 and 296-24-956 through 296-24-960.

(2) Ventilation.

(a) In addition to the provisions of WAC 296-24-37007, where applicable, exhaust ventilation shall be sufficient to maintain the atmosphere below the lowest explosive limits for the materials being applied. All nondeposited air-suspended powders shall be safely removed via exhaust ducts to the powder recovery cyclone or receptacle. Each installation shall be designed and operated to meet the foregoing performance specification.

(b) Powders shall not be released to the outside atmosphere.

(3) Drying, curing, or fusion equipment. The provisions of the Standard for Ovens and Furnaces, NFPA No. 86A-1969 shall apply where applicable.

(4) Operation and maintenance.

(a) All areas shall be kept free of the accumulation of powder coating dusts, particularly such horizontal surfaces as ledges, beams, pipes, hoods, booths, and floors.

(b) Surfaces shall be cleaned in such manner as to avoid scattering dust to other places or creating dust clouds.

(c) "No smoking" signs in large letters on contrasting color background shall be conspicuously posted at all powder coating areas and powder storage rooms.

(5) Fixed electrostatic spraying equipment. The provisions of WAC 296-24-37015 and other subsections of this section shall apply to fixed electrostatic equipment, except that electrical equipment not covered therein shall conform to (1) of this section.

(6) Electrostatic hand spraying equipment. The provisions of WAC 296-24-37017 and other subsections of this section, shall apply to electrostatic handguns when used in powder coating, except that electrical equipment not covered therein shall conform to (1) of this section.

(7) Electrostatic fluidized beds.

(a) Electrostatic fluidized beds and associated equipment shall be of approved types. The maximum surface temperature of this equipment in the coating area shall not exceed 150°F. The high voltage circuits shall be so designed as to not produce a spark of sufficient intensity to ignite any powder-air mixtures nor result in appreciable shock hazard upon coming in contact with a grounded object under normal operating conditions.

(b) Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of the charging electrodes and their connections to the power supply shall be located outside of the powder coating area or shall otherwise conform to the requirements of (1) of this section.

(c) All electrically conductive objects within the charging influence of the electrodes shall be adequately grounded. The powder coating equipment shall carry a prominent, permanently installed warning regarding the necessity for grounding these objects.

(d) Objects being coated shall be maintained in contact with the conveyor or other support in order to insure proper grounding. Hangers shall be regularly cleaned to insure effective contact and areas of contact shall be sharp points or knife edges where possible.

(e) The electrical equipment shall be so interlocked with the ventilation system that the equipment cannot be operated unless the ventilation fans are in operation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-37023, filed 4/19/85; Order 76-6, § 296-24-37023, filed 3/1/76; Order 73-5, § 296-24-37023, filed 5/9/73 and Order 73-4, § 296-24-37023, filed 5/7/73.]

WAC 296-24-37025 Organic peroxides and dual component coatings. (1) Conformance. All spraying operations involving the use of organic peroxides and other dual component coatings shall be conducted in approved sprinklered spray booths meeting the requirements of this section.

(2) Smoking. Smoking shall be prohibited and "no smoking" signs shall be prominently displayed and only nonsparking tools shall be used in any area where organic peroxides are stored, mixed or applied.

[Order 73-5, § 296-24-37025, filed 5/9/73 and Order 73-4, § 296-24-37025, filed 5/7/73.]

WAC 296-24-37027 Scope. This section applies to flammable and combustible finishing materials when applied as a spray by compressed air, "airless" or "hydraulic atomization," steam, electrostatic methods, or by any other means in continuous or intermittent processes. The section also covers the application of combustible powders by powder spray guns, electrostatic powder spray guns, fluidized beds, or electrostatic fluidized beds. The section does not apply to outdoor spray application of buildings, tanks or other similar structures, nor to small portable spraying apparatus not used repeatedly in the same location.

[Order 73-5, § 296-24-37027, filed 5/9/73 and Order 73-4, § 296-24-37027, filed 5/7/73.]

WAC 296-24-405 Dip tanks containing flammable or combustible liquids.

[Order 73-5, § 296-24-405, filed 5/9/73 and Order 73-4, § 296-24-405, filed 5/7/73.]

WAC 296-24-40501 Definitions. (1) Dip tank. Shall mean a tank, vat, or container of flammable or combustible liquid in which articles or materials are immersed for the purpose of coating, finishing, treating, or similar processes.

(2) Vapor area. Shall mean any area containing dangerous quantities of flammable vapors in the vicinity of dip tanks, their drainboards or associated drying, conveying, or other equipment during operation or shutdown periods.

(3) Approved. Unless otherwise indicated, approval or listing by at least one of the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp.

(4) Listed. See "approved" in (3) of this section.

[Order 73-5, § 296-24-40501, filed 5/9/73 and Order 73-4, § 296-24-40501, filed 5/7/73.]

WAC 296-24-40503 Ventilation. (1) Vapor area ventilation. Vapor areas as defined in WAC 296-24-40501(2) shall be limited to the smallest practical space by maintaining a properly designed system of mechanical ventilation arranged to move air from all directions towards the vapor area origin and thence to a safe outside location. Ventilating systems shall conform to the Standards for Blower and Exhaust Systems (NFPA Pamphlet No. 91-1969). Required ventilating systems shall be so arranged that the failure of any ventilating fan shall automatically stop any dipping conveyor system. See also WAC 296-24-40505(6).

(2) Ventilation combined with drying. When a required ventilating system serves associated drying operations utilizing a heating system which may be a source of ignition, means shall be provided for preventilation before the heating system can be started; the failure of any ventilating fan shall automatically shut down the heating system; and the installation shall otherwise conform to the Standard for Ovens and Furnaces (NFPA No. 86A-1969).

[Order 73-5, § 296-24-40503, filed 5/9/73 and Order 73-4, § 296-24-40503, filed 5/7/73.]

WAC 296-24-40505 Construction of dip tanks. (1) General. Dip tanks, including drainboards if provided, shall be constructed of substantial noncombustible material, and their supports shall be of heavy metal, reinforced concrete, or masonry. Where dip tanks extend through a floor to the story below or where the weakening of the tank supports by fire may result in the tank collapse, supports should be of material having not less than 1-hour fire resistance.

(2) Overflow pipes.

(a) Dip tanks of over 150 gallons in capacity or 10 square feet in liquid surface area shall be equipped with a properly trapped overflow pipe leading to a safe location outside buildings. Smaller dip tanks should also be so equipped, where practical. The discharge of the overflow pipe should be so located and arranged that if the entire combustible contents of the dip tank is overflowed through overflow pipe by the application of water during fire fighting, property will not be endangered. The size of the overflow pipe should be sufficient to conduct the maximum rate of flow of water expected to be applied to the liquid surface of the dip tank from automatic sprinklers or from other sources in the event of fire.

(b) Overflow pipes shall be of sufficient capacity to overflow the maximum delivery of dip tank liquid fill pipes but shall not be less than 3 inches in diameter and shall be increased in size depending upon the area of the liquid surface and the length and pitch of pipe.

(c) Piping connections on drains and overflow lines shall be designed so as to permit ready access for inspection and cleaning of the interior.

(d) The bottom of the overflow connection shall be not less than 6 inches below the top of the tank. See also (6) of this section and WAC 296-24-40513 (3)(b).

(3) Bottom drains.

(a) Dip tanks over 500 gallons in liquid capacity shall be equipped with bottom drains automatically and manually arranged to quickly drain the tank in the event of fire, unless the viscosity of the liquid at normal atmospheric temperature makes this impractical. Manual operation shall be from a safely accessible location. Where

gravity flow is not practicable, automatic pumps shall be required.

(b) Such drain shall be trapped and discharge to a closed properly vented salvage tank or to a safe location outside which will not endanger property.

(c) According to tank capacity the diameter of bottom drainpipe shall be not less than the following:

Gallons:	Inches
500 to 750	3
750 to 1,000	4
1,000 to 2,500	5
2,500 to 4,000	6
Over 4,000	8

(4) Salvage tanks. The capacity of the salvage tank shall be greater than the capacity of the dip tank or tanks to which they are connected.

(5) Automatic extinguishing facilities. Except as noted in WAC 296-24-40515(1) (applying to hardening and tempering tanks), all dip tanks exceeding 150 gallons liquid capacity or having a liquid surface area exceeding 4 square feet shall be protected with at least one of the automatic extinguishing facilities conforming to WAC 296-24-40513 (2), (3), (4), (5) or (6).

(6) Conveyor systems. Dip tanks utilizing a conveyor system shall be so arranged that in the event of fire, the conveyor system shall automatically cease motion and required bottom drains shall open. Conveyor systems shall automatically cease motion unless required ventilation is in full operation. See also WAC 296-24-40503(1).

(7) Heating dip tank liquids. When dip tank liquids are artificially heated, either by the dipping of heated articles, or by other application of heat to the liquid, provision shall be made to prevent a temperature rise greater than 50°F below the flashpoint of the liquid. See also WAC 296-24-40515(1).

[Order 73-5, § 296-24-40505, filed 5/9/73 and Order 73-4, § 296-24-40505, filed 5/7/73.]

WAC 296-24-40507 Liquids used in dip tanks, storage and handling. The storage of flammable and combustible liquids in connection with dipping operation shall conform to the requirements of WAC 296-24-330, where applicable. Where portable containers are used for the replenishment of flammable and combustible liquids, provision shall be made so that both the container and tank shall be positively grounded and electrically bonded to prevent static electric sparks.

[Order 73-5, § 296-24-40507, filed 5/9/73 and Order 73-4, § 296-24-40507, filed 5/7/73.]

WAC 296-24-40509 Electrical and other sources of ignition. (1) Vapor areas.

(a) There shall be no open flames, spark producing devices, or heated surfaces having a temperature sufficient to ignite vapors in any vapor area. Except as specifically permitted in WAC 296-24-40515(3), relating to electrostatic apparatus, electrical wiring and equipment in any vapor area (as defined in WAC 296-24-40501(2)) shall be explosion proof type as required of WAC 296-24-956 through 296-24-960 for Class I, locations and shall otherwise conform to the requirements of WAC 296-24-956 through 296-24-960.

(b) Unless specifically approved for locations containing both deposits of readily ignitable residues and explosive vapors, there shall be no electrical equipment in the vicinity of dip tanks or associated drainboards or drying operations which are subject to splashing or dripping of dip tank liquids, except wiring in rigid conduit or in threaded boxes or fittings containing no taps, splices, or terminal connections, and except as specifically permitted in WAC 296-24-40515(3).

(2) Adjacent areas. In any floor space outside a vapor area but within 20 feet and not separated by tight partitions, there shall be no open flames or spark producing devices except as specifically permitted in NFPA Standard No. 86A-1969, Ovens and Furnaces, paragraph 200-7. Electrical wiring and equipment shall conform to the provisions of WAC 296-24-956 through 296-24-960.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-40509, filed 4/19/85; Order 76-6, § 296-24-40509, filed 3/1/76; Order 73-5, § 296-24-40509, filed 5/9/73 and Order 73-4, § 296-24-40509, filed 5/7/73.]

WAC 296-24-40511 Operations and maintenance. (1) General. Areas in the vicinity of dip tanks shall be kept as clear of combustible stock as practical and shall be kept entirely free of combustible debris.

(2) Waste cans. When waste or rags are used in connection with dipping operations, approved metal waste cans shall be provided and all impregnated rags or waste deposited therein immediately after use. The contents of waste cans shall be properly disposed of at least once daily at the end of each shift.

(3) Inspection. Periodic inspection or tests of all dip tank facilities shall be made, including covers, overflow pipe inlets and discharge, bottom drains and valves, electrical wiring and equipment and grounding connections, ventilating facilities, and all extinguishing equipment. Any defects found shall be promptly corrected.

(4) Warning signs. "No smoking" signs in large letters on contrasting color background shall be conspicuously posted in the vicinity of dip tanks.

[Order 73-5, § 296-24-40511, filed 5/9/73 and Order 73-4, § 296-24-40511, filed 5/7/73.]

WAC 296-24-40513 Extinguishment. (1) Extinguishers. Areas in the vicinity of dip tanks shall be provided with manual fire extinguishers suitable for flammable and combustible liquid fires, conforming to WAC 296-24-592.

(2) Automatic water spray extinguishing systems. Automatic water spray extinguishing systems shall conform to WAC 296-24-627 and shall be arranged to protect tanks, drainboards, and stock over drainboards.

(3) Automatic foam extinguishing systems. Automatic foam extinguishing systems shall conform to WAC 296-24-627 and;

(a) Foam producing material selected shall be suitable for intended use, taking into account characteristics of the dip tank liquid;

(b) Overflow pipe shall be arranged to prevent the floating away of foam and clogging overflow pipe. This may be accomplished by either of the following:

(i) Overflow pipe may be extended through tank wall and terminated in an ell pointing downward. The bottom of the overflow pipe at the point it pierces tank wall should not be over 2 inches above the opening or face of the ell.

(ii) Overflow pipe inlet may be provided with a removable screen of 1/4-inch mesh having an area at least twice the cross-sectional area of overflow pipe. Screens which may be clogged by dip tank ingredients shall be inspected and cleaned periodically.

(4) Automatic carbon dioxide systems. Automatic carbon dioxide systems shall conform to WAC 296-24-623 and shall be arranged to protect both dip tanks and drainboards and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(5) Dry chemical extinguishing systems. Dry chemical extinguishing systems shall conform to WAC 296-24-622 and shall be arranged to protect both dip tanks and drainboards, and unless stock over drainboards is otherwise protected with automatic extinguishing facilities, shall also be arranged to protect such stock.

(6) Dip tank covers.

(a) Covers arranged to close automatically in the event of fire shall be actuated by approved automatic devices and shall also be arranged for manual operation.

(b) Covers shall be of substantial noncombustible material or of tin-clad type with enclosing metal applied with locked joints.

(c) Chains or wire rope shall be used for cover support or operating mechanism where the burning of a cord would interfere with the action of a device.

(d) Covers shall be kept closed when tanks are not in use.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-40513, filed 12/24/81; Order 73-5, § 296-24-40513, filed 5/9/73 and Order 73-4, § 296-24-40513, filed 5/7/73.]

WAC 296-24-40515 Special dip tank applications. (1) Hardening and tempering tanks.

(a) Tanks shall be located as far as practicable from furnaces and shall not be located on or near combustible floors.

(b) Tanks shall be provided with a noncombustible hood and vent or other equally effective means of venting to the outside of the building to serve as a vent in case of fire. All such vent ducts shall be treated as flues and be kept well away from combustible roofs or materials.

(c) Tanks shall be so designed that the maximum workload is incapable of raising the temperature of the cooling medium to within 50° below its flashpoint, or such tanks shall be equipped with circulating cooling systems which will accomplish the same result.

(d) Tanks shall be equipped with a high temperature limit switch arranged to sound an alarm when the temperature of the quenching medium reaches within 50°F below the flashpoint. If practical from an operating standpoint, such limit switches shall also shut down conveying equipment supplying work to the tank.

(e) The provisions of WAC 296-24-40505(5) shall apply to tanks having a liquid surface area of 25 square feet or more or a capacity of 500 gallons or more.

(f) Air under pressure shall not be used to fill or to agitate oil tanks.

(g) Drain facilities from the bottom of the tank may be combined with the oil circulating system or arranged independently to drain the oil to a safe location. The drain valve shall be operated automatically with approved heat actuated devices or manually, and if the latter, the valve shall be operated from a safe distance.

(2) Flow coat; general.

(a) Except as modified in this subsection, all of the preceding standards for dip tanks apply.

(b) All piping shall be strongly erected and rigidly supported.

(c) Paint shall be supplied by direct low-pressure pumping arranged to automatically shut down by means of approved heat actuated devices, in the case of fire, or paint may be supplied by a gravity tank not exceeding 10 gallons in capacity.

(d) The area of the sump and any areas on which paint flows should be considered the area of dip tank.

(3) Electrostatic apparatus; general.

(a) Installation and use of electrostatic detearing equipment shall conform to WAC 296-24-40501 through 296-24-40513.

(b) Electrostatic apparatus and devices used in connection with paint detearing operations shall be of approved types.

(c) Transformers, powerpacks, control apparatus, and all other electrical portions of the equipment, with the exception of high voltage grids and their connections, shall be located outside the vapor area or shall conform to the requirements of WAC 296-24-40509.

(d) Electrodes shall be of substantial construction, shall be rigidly supported in permanent locations and shall be effectively insulated from ground. Insulators shall be nonporous and noncombustible.

(e) High voltage leads to electrodes shall be effectively and permanently supported on suitable insulators, and shall be effectively guarded against accidental contact or grounding. An automatic means shall be provided for grounding and discharging any accumulated residual charge on the electrode assembly or the secondary circuit of the high voltage transformer when the transformer primary is disconnected from the source of supply.

(f) A space shall be maintained between goods being deteared and electrodes or conductors of at least twice the sparking distance. A suitable sign stating the sparking distance shall be conspicuously posted near the assembly.

(g) Goods being deteared using this electrostatic process are to be supported on conveyors. The conveyors

shall be so arranged as to maintain safe distances between the goods and the electrodes at all times. All goods shall be so supported as to prevent any swinging or movement which would reduce the clearance to less than specified in (3)(f) of this section.

(h) This electrostatic process is not approved where goods being deteared are manipulated by hand.

(i) Electrostatic apparatus shall be equipped with automatic controls which will operate without time delay to disconnect the power supply to the high voltage transformer and to signal the operator under any of the following conditions:

(i) Stoppage of ventilating fans or failure of ventilating equipment from any cause.

(ii) Stoppage of the conveyor carrying goods past the high voltage grid.

(iii) Occurrence of a ground or of an imminent ground at any point on the high voltage system.

(iv) Reduction of clearance below that specified in (3)(f) of this section.

(j) Adequate fencing, railings, or guards shall be so placed about the equipment that they, either by their location or character or both, assure that a safe isolation of the process is maintained from plant storage or personnel. Such railings, fencing and guards shall be of conducting material, adequately grounded, and should be at least 5 feet from processing equipment.

(k) Electrode insulators shall be kept clean and dry.

(l) The detearing area shall be ventilated by exhausting adequate air from the area as specified in WAC 296-24-40503.

(m) All areas for detearing shall be protected by automatic sprinklers where this protection is available. Where this protection is not available, other approved automatic extinguishing equipment shall be provided.

(n) Drip plates and screens subject to paint deposits shall be removable and shall be taken to a safe place for cleaning.

(4) Roll coating.

(a) The processes of roll coating, spreading, and impregnating, in which fabrics, paper, or other materials are passed directly through a tank or through containing flammable or combustible liquids, or over the surface of a roller that revolves partially submerged in a Class I or Class II liquid, as these terms are defined in WAC 296-24-33001, shall conform to the applicable requirements of WAC 296-24-40501 through 296-24-40513.

(b) Adequate arrangements shall be made to prevent sparks from static electricity by electrically bonding and grounding all metallic rotating and other parts of machinery and equipment and by the installation of static collectors or maintaining a conductive atmosphere such as a high relative humidity.

[Order 76-6, § 296-24-40515, filed 3/1/76; Order 74-27, § 296-24-40515, filed 5/7/74; Order 73-5, § 296-24-40515, filed 5/9/73 and Order 73-4, § 296-24-40515, filed 5/7/73.]

WAC 296-24-450 Chlorine cylinders used in chlorinator systems. Ventilation, storage of tanks and use of tanks shall meet specifications of The Chlorine Manual, The Chlorine Institute, Inc., third edition, 1959.

[Order 74-27, § 296-24-450, filed 5/7/74.]

Part F-1

STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES

WAC

296-24-475 Storage and handling of liquefied petroleum gases.
296-24-47501 Definitions.
296-24-47503 Scope.
296-24-47505 Basic rules.
296-24-47507 Cylinder systems.
296-24-47509 Systems utilizing containers other than DOT containers.
296-24-47511 Liquefied petroleum gas as a motor fuel.
296-24-47513 Storage of containers awaiting use or resale.
296-24-47515 LP-gas system installations on commercial vehicles.
296-24-47517 Liquefied petroleum gas service stations.

WAC 296-24-475 Storage and handling of liquefied petroleum gases.

[Order 73-5, § 296-24-475, filed 5/9/73 and Order 73-4, § 296-24-475, filed 5/7/73.]

WAC 296-24-47501 Definitions. (1) API-ASME container. A container constructed in accordance with the requirements of WAC 296-24-47505 (3)(a).

(2) ASME container. A container constructed in accordance with the requirements of WAC 296-24-47505 (3)(a).

(3) Container assembly. An assembly consisting essentially of the container and fittings for all container openings, including shutoff valves, excess flow valves, liquid-level gaging devices, safety relief devices, and protective housing.

(4) Containers. All vessels, such as tanks, cylinders, or drums, used for transportation or storing liquefied petroleum gases.

(5) DOT. Department of transportation.

(6) DOT container. A container constructed in accordance with the applicable requirements of 49 CFR chapter 1.

(7) "Liquefied petroleum gases." "LPG" and "LP-gas." Any material which is composed predominantly of any of the following hydrocarbons, or mixtures of them; propane, propylene, butanes (normal butane or iso-butane), and butylenes.

(8) Movable fuel storage tenders or farm carts. Containers not in excess of 1,200 gallons water capacity, equipped with wheels to be towed from one location of usage to another. They are basically nonhighway vehicles, but may occasionally be moved over public roads or highways. They are used as a fuel supply for farm tractors, construction machinery and similar equipment.

(9) P.S.I.G. Pounds per square inch gauge.

(10) P.S.I.A. Pounds per square inch absolute.

(11) Systems. An assembly of equipment consisting essentially of the container or containers, major devices such as vaporizers, safety relief valves, excess flow valves, regulators, and piping connecting such parts.

(12) Vaporizer-burner. An integral vaporizer-burner unit, dependent upon the heat generated by the burner as the source of heat to vaporize the liquid used for dehydrators or dryers.

(13) Ventilation, adequate. When specified for the prevention of fire during normal operation, ventilation shall be considered adequate when the concentration of the gas in a gas–air mixture does not exceed 25 percent of the lower flammable limit.

(14) Approved. Unless otherwise indicated, listing or approval by the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factual Mutual Engineering Corp.

(15) Listed. See "approved" in WAC 296–24–47501(14).

(16) DOT specifications. Regulations of the department of transportation published in 49 CFR chapter I.

(17) DOT regulations. See WAC 296–24–47501(16).

(18) DOT requirements. See WAC 296–24–47501(16).

(19) DOT cylinders. Cylinders meeting the requirements of 49 CFR chapter I.

[Order 73–5, § 296–24–47501, filed 5/9/73 and Order 73–4, § 296–24–47501, filed 5/7/73.]

WAC 296–24–47503 Scope. (1) Application. (a) WAC 296–24–47505 applies to installations made in accordance with the requirements of WAC 296–24–47507 through 296–24–47511, 296–24–47515 and 296–24–47517, except as noted in each of those sections.

(b) WAC 296–24–47507 through 296–24–47517 apply as provided in each of those sections.

(2) Inapplicability. These sections do not apply to:

(a) Marine and pipeline terminals, natural gas processing plants, refineries, or tank farms other than those at industrial sites.

(b) LP–gas refrigerated storage systems;

(c) LP–gas when used with oxygen. The requirements of WAC 296–24–680 through 296–24–722 shall apply to such use;

(d) LP–gas when used in utility gas plants. The National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants, NFPA No. 59–1968, shall apply to such use;

(e) Low–pressure (not in excess of one–half pound per square inch or 14 inches water column) LP–gas piping systems, and the installation and operation of residential and commercial appliances including their inlet connections, supplied through such systems. For such systems, the National Fire Protection Association Standard for the Installation of Gas Appliances and Gas Piping, NFPA 54–1969 shall apply.

(3) Retroactivity. Unless otherwise stated, it is not intended that the provisions of these sections be retroactive.

(a) Existing plants, appliances, equipment, buildings, structures, and installations for the storage, handling or use of LP–gas, which were in compliance with the current provisions of the National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases NFPA NO. 58–1972, 1973 at the time of manufacture or installation may be continued in use, if such continued use does not constitute a recognized hazard that is causing or is likely to cause death or serious physical harm to employees.

(b) Stocks of equipment and appliances on hand in such locations as manufacturers' storage, distribution warehouses, and dealers' storage and showrooms, which were in compliance with the current provisions of the National Fire Protection Association Standard for the Storage and Handling of Liquefied Petroleum Gases, NFPA No. 58–1972, 1973, at the time of manufacture, may be placed in service, if such use does not constitute a recognized hazard that is causing or is likely to cause death or serious physical harm to employees.

[Order 73–5, § 296–24–47503, filed 5/9/73 and Order 73–4, § 296–24–47503, filed 5/7/73.]

WAC 296–24–47505 Basic rules. (1) Odorizing gases.

(a) All liquefied petroleum gases shall be effectively odorized by an approved agent of such character as to indicate positively, by distinct odor, the presence of gas down to concentration in air of not over one–fifth the lower limit of flammability. Odorization, however, is not required if harmful in the use of further processing of the liquefied petroleum gas, or if odorization will serve no useful purpose as a warning agent in such use or further processing.

(b) The odorization requirement of (1)(a) of this section shall be considered to be met by the use of 1.0 pounds of ethyl mercaptan, 1.0 pounds of thiophane or 1.4 pounds of amyl mercaptan per 10,000 gallons of LP–gas. However, this listing of odorants and quantities shall not exclude the use of other odorants that meet the odorization requirements of (1)(a) of this section.

(2) Approval of equipment and systems.

(a) Each system utilizing DOT containers in accordance with 49 CFR Part 178 shall have its container valves, connectors, manifold valve assemblies, and regulators approved.

(b) Each system for domestic or commercial use utilizing containers of 2,000 gallons or less water capacity, other than those constructed in accordance with 49 CFR Part 178, shall consist of a container assembly and one or more regulators, and may include other parts. The system as a unit or the container assembly as a unit, and the regulator or regulators, shall be individually listed.

(c) In systems utilizing containers of over 2,000 gallons water capacity, each regulator, container, valve, excess flow valve, gaging device, and relief valve installed on or at the container, shall have its correctness as to design, construction, and performance determined by listing by Underwriters Laboratories, Inc., or Factory Mutual Engineering Corp.

(d) The provisions of (3)(a) of this section shall not be construed as prohibiting the continued use or reinstallation of containers constructed and maintained in accordance with the standard for the Storage and Handling of Liquefied Petroleum Gases NFPA No. 58 in effect at the time of fabrication.

(e) Containers used with systems embodied in WAC 296–24–47505, 296–24–47509 (3)(c) and 296–24–

47513, shall be constructed, tested, and stamped in accordance with DOT specifications effective at the date of their manufacture.

(3) Requirements for construction and original test of containers. (a) Containers used with systems embodied in WAC 296-24-47509, 296-24-47513 through 296-24-47517, except as provided in WAC 296-24-47511 (3)(c) and 296-24-47515 (2)(a), shall be designed, constructed, and tested in accordance with the Rules for Construction of Unfired Pressure Vessels, section VIII, Division 1, American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, 1968 edition.

(b) Containers constructed according to the 1949 and earlier editions of the ASME Code do not have to comply with U-2 through U-10 and U-19 thereof. Containers constructed according to U-70 in the 1949 and earlier editions do not meet the requirements of this section.

(c) Containers designed, constructed, and tested prior to July 1, 1961, according to the Code for Unfired Pressure Vessels for Petroleum Liquids and Gases, 1951 edition with 1954 Addenda, of the American Petroleum Institute and the American Society of Mechanical Engineers shall be considered in conformance. Containers constructed according to API-ASME Code do not have to comply with section I or with appendix to section I. W-601 to W-606 inclusive in the 1943 and earlier editions do not apply.

(4) Welding of containers.

(a) Welding to the shell, head, or any other part of the container subject to internal pressure, shall be done in compliance with the code under which the tank was fabricated. Other welding is permitted only on saddle plates, lugs, or brackets attached to the container by the tank manufacturer.

(b) Where repair or modification involving welding of DOT containers is required, the container shall be returned to a qualified manufacturer making containers of the same type, and the repair or modification made in compliance with DOT regulations.

(5) Markings on container.

(a) Each container covered in (3)(a) of this section except as provided in (2)(d) of this section shall be marked as specified in the following:

(i) With a marking identifying compliance with, and other markings required by, the rules of the reference under which the container is constructed; or with the stamp and other markings required by the laws, rules or regulations as administered by the state of Washington, department of labor and industries pertaining to such containers.

(ii) With notation as to whether the container is designed for underground or aboveground installation or both. If intended for both and different style hoods are provided, the marking shall indicate the proper hood for each type of installation.

(iii) With the name and address of the supplier of the container, or with the trade name of the container.

(iv) With the water capacity of the container in pounds or gallons, U.S. standard.

(v) With the pressure in p.s.i.g., for which the container is designed.

(vi) With the wording "This container shall not contain a product having a vapor pressure in excess of—p.s.i.g. at 100°F," see WAC 296-24-47509, Table H-31.

(vii) With the tare weight in pounds or other identified unit of weight for containers with a water capacity of 300 pounds or less.

(viii) With marking indicating the maximum level to which the container may be filled with liquid at temperatures between 20°F and 130°F, except on containers provided with fixed maximum level indicators or which are filled by weighing. Markings shall be increments of not more than 20°F. This marking may be located on the liquid level gaging device.

(ix) With the outside surface area in square feet.

(b) Markings specified shall be on a metal nameplate attached to the container and located in such a manner as to remain visible after the container is installed.

(c) When LP-gas and one or more other gases are stored or used in the same area, the containers shall be marked to identify their content. Marking shall be in compliance with American National Standard Z48.1-1954, "Method of Marking Portable Compressed Gas Containers to Identify the Material Contained."

(6) Location of containers and regulating equipment.

(a) Containers, and first stage regulating equipment if used, shall be located outside of buildings, except under one or more of the following:

(i) In buildings used exclusively for container charging, vaporization pressure reduction, gas mixing, gas manufacturing, or distribution.

(ii) When portable use is necessary and in accordance with WAC 296-24-47507(5).

(iii) LP-gas fueled stationary or portable engines in accordance with WAC 296-24-47511 (11) or (12).

(iv) LP-gas fueled industrial trucks used in accordance with WAC 296-24-47511(13).

(v) LP-gas fueled vehicles garaged in accordance with WAC 296-24-47511(14).

(vi) Containers awaiting use or resale when stored in accordance with WAC 296-24-47513.

(b) Each individual container shall be located with respect to the nearest important building or group of buildings or line of adjoining property which may be built on in accordance with Table H-23.

TABLE H-23

Water capacity per container	Minimum distances		
	Containers		Between above-ground containers
	Under-ground	Above-ground	
Less than 125 gals[1]	10 feet	None	None
125 to 250 gallons	10 feet	10 feet	None.
251 to 500 gallons	10 feet	10 feet	3 feet.

TABLE H-23

Water capacity per container	Minimum distances		
	Containers		Between above-ground containers
	Underground	Aboveground	
501 to 2,000 gallons	25 feet[2]	25 feet[2]	3 feet.
2,001 to 30,000 gallons	50 feet	50 feet	5 feet.
30,001 to 70,000 gallons	50 feet	75 feet	1/4 of sum of diameters of adjacent containers.
70,001 to 90,000 gallons	50 feet	100 feet	

[1]If the aggregate water capacity of a multi-container installation at a consumer site is 501 gallons or greater, the minimum distance shall comply with the appropriate portion of this table, applying the aggregate capacity rather than the capacity per container. If more than one installation is made, each installation shall be separated from another installation by at least 25 feet. Do not apply the MINIMUM DISTANCES BETWEEN ABOVE-GROUND CONTAINERS to such installations.

[2]Note: The above distance requirements may be reduced to not less than 10 feet for a single container of 1,200 gallons water capacity or less, providing such a container is at least 25 feet from any other LP-gas container of more than 125 gallons water capacity.

(c) Containers installed for use shall not be stacked one above the other.

(d) In industrial installations involving containers of 180,000 gallons aggregate water capacity or more, where serious mutual exposures between the container and adjacent properties prevail, firewalls or other means of special protection designed and constructed in accordance with good engineering practices are required.

(e) In the case of buildings devoted exclusively to gas manufacturing and distributing operations, the distances required by Table H-23 may be reduced provided that in no case shall containers of water capacity exceeding 500 gallons be located closer than 10 feet to such gas manufacturing and distributing buildings.

(f) Readily ignitible material such as weeds and long dry grass shall be removed within 10 feet of any container.

(g) The minimum separation between liquefied petroleum gas containers and flammable liquid tanks shall be 20 feet, and the minimum separation between a container and the centerline of the dike shall be 10 feet. The foregoing provision shall not apply when LP-gas containers of 125 gallons or less capacity are installed adjacent to Class III flammable liquid tanks of 275 gallons or less capacity.

(h) Suitable means shall be taken to prevent the accumulation of flammable liquids under adjacent liquefied petroleum gas containers, such as by diking, diversion curbs, or grading.

(i) When dikes are used with flammable liquid tanks, no liquefied petroleum gas containers shall be located within the diked area.

(7) Container valves and container accessories.

(a) Valves, fittings, and accessories connected directly to the container including primary shutoff valves, shall have a rated working pressure of at least 250 p.s.i.g. and shall be of material and design suitable for LP-gas service. Cast iron shall not be used for container valves, fittings, and accessories. This does not prohibit the use of container valves made of malleable or nodular iron.

(b) Connections to containers, except safety relief connections, liquid level gaging devices, and plugged openings, shall have shutoff valves located as close to the container as practicable.

(c) Excess flow valves, where required shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections or line including valves, fittings, etc., being protected by an excess flow valve shall have a greater capacity than the rated flow of the excess flow valve.

(d) Liquid level gaging devices which are so constructed that outward flow of container contents shall not exceed that passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(e) Openings from container or through fittings attached directly on container to which pressure gage connection is made, need not be equipped with shutoff or excess flow valves if such openings are restricted to not larger than No. 54 drill size opening.

(f) Except as provided in WAC 296-24-47507 (5)(a)(ii), excess flow and back pressure check valves where required by this section shall be located inside of the container or at a point outside where the line enters the container; in the latter case, installation shall be made in such manner that any undue strain beyond the excess flow or back pressure check valve will not cause breakage between the container and such valve.

(g) Excess flow valves shall be designed with a bypass, not to exceed a No. 60 drill size opening to allow equalization of pressures.

(h) Containers of more than 30 gallons water capacity and less than 2,000 gallons water capacity, filled on a volumetric basis, and manufactured after December 1, 1963, shall be equipped for filling into the vapor space.

(8) Piping—Including pipe, tubing, and fittings.

(a) Pipe, except as provided in WAC 296-24-47511 (6)(a) and 296-24-47515 (10)(c) shall be wrought iron or steel (black or galvanized), brass, copper, or aluminum alloy. Aluminum alloy pipe shall be at least Schedule 40 in accordance with the specifications for Aluminum Alloy Pipe, American National Standards Institute (AMSI) H38.7-1969 (ASTM, B241-1969), except that the use of alloy 5456 is prohibited and shall be suitably marked at each end of each length indicating compliance with American National Standard Institute Specifications. Aluminum alloy pipe shall be protected against external corrosion when it is in contact with dissimilar metals other than galvanized steel, or its location is subject to repeated wetting by such liquids as water (except rain water), detergents, sewage, or leaking from

other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, may be considered suitable protection. The maximum nominal pipe size for aluminum pipe shall be three–fourths inch and shall not be used for pressures exceeding 20 p.s.i.g. Aluminum alloy pipe shall not be installed within 6 inches of the ground.

(i) Vapor piping with operating pressures not exceeding 125 p.s.i.g. shall be suitable for a working pressure of at least 125 p.s.i.g. Pipe shall be at least Schedule 40 ASTM A–53–69, Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal.

(ii) Vapor piping with operating pressures over 125 p.s.i.g. and all liquid piping shall be suitable for a working pressure of at least 250 p.s.i.g. Pipe shall be at least Schedule 80 if joints are threaded or threaded and back welded. At least Schedule 40 (ASTM A–53–1969 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal) shall be used if joints are welded, or welded and flanged.

(b) Tubing shall be seamless and of copper, brass, steel, or aluminum alloy. Copper tubing shall be of Type K or L or equivalent as covered in the Specification for Seamless Copper Water Tube, ANSI H23.1–1970 (ASTM B88–1969). Aluminum alloy tubing shall be of Type A or B or equivalent as covered in Specification ASTM B210–1968 and shall be suitably marked every 18 inches indicating compliance with ASTM Specifications. The minimum nominal wall thickness of copper tubing and aluminum alloy tubing shall be as specified in Table H–24 and Table H–25.

TABLE H–24

WALL THICKNESS OF COPPER TUBING[1]

Note: The standard size by which tube is designated is 1/8–inch smaller than its nominal outside diameter.

Standard size (inches)	Nominal O.D. (inches)	Nominal wall thickness (inches)	
		Type K	Type L
1/4	0.375	0.035	0.030
3/8	0.500	0.049	0.035
1/2	0.625	0.049	0.040
5/8	0.750	0.049	0.042
3/4	0.875	0.065	0.045
1	1.125	0.065	0.050
1 1/4	1.375	0.065	0.055
1 1/2	1.625	0.072	0.060
2	2.125	0.083	0.070

[1]Based on data in Specification for Seamless Copper Water Tubing, ANSI H23.1–1970 (ASTM B–88–69).

TABLE H–25

WALL THICKNESS OF ALUMINUM ALLOY TUBING[1]

Outside diameter (inches)	Nominal wall thickness (inches)	
	Type A	Type B
3/8	0.035	0.049
1/2	0.035	0.049
5/8	0.042	0.049
3/4	0.049	0.058

[1]Based on data in Standard Specification for Aluminum–Alloy Drawn Seamless Coiled Tubes for Special Purpose Applications, ASTM B210–68.

Aluminum alloy tubing shall be protected against external corrosion when it is in contact with dissimilar metals other than galvanized steel, or its location is subject to repeated wetting by liquids such as water (except rainwater), detergents, sewage, or leakage from other piping, or it passes through flooring, plaster, masonry, or insulation. Galvanized sheet steel or pipe, galvanized inside and out, may be considered suitable protection. The maximum outside diameter for aluminum alloy tubing shall be three–fourths inch and shall not be used for pressures exceeding 20 p.s.i.g. Aluminum alloy tubing shall not be installed within 6 inches of the ground.

(c) In systems where the gas in liquid form without pressure reduction enters the building, only heavy walled seamless brass or copper tubing with an internal diameter not greater than three thirty–seconds inch, and a wall thickness of not less than three sixty–fourths inch shall be used. This requirement shall not apply to research and experimental laboratories, buildings, or separate fire divisions of buildings used exclusively for housing internal combustion engines, and to commercial gas plants or bulk stations where containers are charged, nor to industrial vaporizer buildings, nor to buildings, structures, or equipment under construction or undergoing major renovation.

(d) Pipe joints may be screwed, flanged, welded, soldered, or brazed with a material having a melting point exceeding 1,000°F. Joints on seamless copper, brass, steel, or aluminum alloy gas tubing shall be made by means of approved gas tubing fittings, or soldered or brazed with a material having a melting point exceeding 1,000°F.

(e) For operating pressures of 125 p.s.i.g. or less, fittings shall be designed for a pressure of at least 125 p.s.i.g. For operating pressures above 125 p.s.i.g., fittings shall be designed for a minimum of 250 p.s.i.g.

(f) The use of threaded cast iron pipe fittings such as ells, tees, crosses, couplings, and unions is prohibited. Aluminum alloy fittings shall be used with aluminum alloy pipe and tubing. Insulated fittings shall be used where aluminum alloy pipe or tubing connects with a dissimilar metal.

(g) Strainers, regulators, meters, compressors, pumps, etc., are not to be considered as pipe fittings. This does not prohibit the use of malleable, nodular, or higher strength gray iron for such equipment.

(h) All materials such as valve seats, packing, gaskets, diaphragms, etc., shall be of such quality as to be resistant to the action of liquefied petroleum gas under the service conditions to which they are subjected.

(i) All piping, tubing, or hose shall be tested after assembly and proved free from leaks at not less than normal operating pressures. After installation, piping and tubing of all domestic and commercial systems shall be tested and proved free of leaks using a manometer or equivalent device that will indicate a drop in pressure. Test shall not be made with a flame.

(j) Provision shall be made to compensate for expansion, contraction, jarring, and vibration, and for settling. This may be accomplished by flexible connections.

(k) Piping outside buildings may be buried, above ground, or both, but shall be well supported and protected against physical damage. Where soil conditions warrant, all piping shall be protected against corrosion. Where condensation may occur, the piping shall be pitched back to the container, or suitable means shall be provided for revaporization of the condensate.

(9) Hose specifications.

(a) Hose shall be fabricated of materials that are resistant to the action of LP-gas in the liquid and vapor phases. If wire braid is used for reinforcing the hose, it shall be of corrosion-resistant material such as stainless steel.

(b) Hose subject to container pressure shall be marked "LP-gas" or "LPG" at not greater than 10-foot intervals.

(c) Hose subject to container pressure shall be designed for a bursting pressure of not less than 1,250 p.s.i.g.

(d) Hose subject to container pressure shall have its correctness as to design construction and performance determined by being listed (see WAC 296-24-47501(15)).

(e) Hose connections subject to container pressure shall be capable of withstanding, without leakage, a test pressure of not less than 500 p.s.i.g.

(f) Hose and hose connections on the low-pressure side of the regulator or reducing valve shall be designed for a bursting pressure of not less than 125 p.s.i.g. or five times the set pressure of the relief devices protecting that portion of the system, whichever is higher.

(g) Hose may be used on the low-pressure side of regulators to connect to other than domestic and commercial gas appliances under the following conditions:

(i) The appliances connected with hose shall be portable and need a flexible connection.

(ii) For use inside buildings the hose shall be of minimum practical length, but shall not exceed 6 feet except as provided in WAC 296-24-47507 (5)(a)(vii) and shall not extend from one room to another, nor pass through any walls, partitions, ceilings, or floors. Such hose shall not be concealed from view or used in a concealed location. For use outside of buildings, the hose may exceed this length but shall be kept as short as practical.

(iii) The hose shall be approved and shall not be used where it is likely to be subjected to temperatures above 125°F. The hose shall be securely connected to the appliance and the use of rubber slip ends shall not be permitted.

(iv) The shutoff valve for an appliance connected by hose shall be in the metal pipe or tubing and not at the appliance end of the hose. When shutoff valves are installed close to each other, precautions shall be taken to prevent operation of the wrong valve.

(v) Hose used for connecting to wall outlets shall be protected from physical damage.

(10) Safety devices.

(a) Every container except those constructed in accordance with DOT specifications and every vaporizer (except motor fuel vaporizers and except vaporizers described in (11)(b)(iii) of this section and WAC 296-24-47509 (4)(e)(i)) whether heated by artificial means or not, shall be provided with one or more safety relief valves of spring-loaded or equivalent type. These valves shall be arranged to afford free vent to the outer air with discharge not less than 5 feet horizontally away from any opening into the building which is below such discharge. The rate of discharge shall be in accordance with the requirements of (10)(b) of this section or (10)(c) of this section in the case of vaporizers.

(b) Minimum required rate of discharge in cubic feet per minute of air at 120 percent of the maximum permitted start to discharge pressure for safety relief valves to be used on containers other than those constructed in accordance with DOT specification shall be as follows:

Surface area (sq. ft.)	Flow rate CFM air
20 or less	626
25	751
30	872
35	990
40	1,100
45	1,220
50	1,330
55	1,430
60	1,540
65	1,640
70	1,750
75	1,850
80	1,950
85	2,050
90	2,150
95	2,240
100	2,340
105	2,440
110	2,530
115	2,630
120	2,720
125	2,810
130	2,900

Surface area (sq. ft.)	Flow rate CFM air
135	2,990
140	3,080
145	3,170
150	3,260
155	3,350
160	3,440
165	3,530
170	3,620
175	3,700
180	3,790
185	3,880
190	3,960
195	4,050
200	4,130
210	4,300
220	4,470
230	4,630
240	4,800
250	4,960
260	5,130
270	5,290
280	5,450
290	5,610
300	5,760
310	5,920
320	6,080
330	6,230
340	6,390
350	6,540
360	6,690
370	6,840
380	7,000
390	7,150
400	7,300
450	8,040
500	8,760
550	9,470
600	10,170
650	10,860
700	11,550
750	12,220
800	12,880
850	13,540
900	14,190
950	14,830
1,000	15,470
1,050	16,100
1,100	16,720
1,150	17,350
1,200	17,960
1,250	18,570
1,300	19,180
1,350	19,780
1,400	20,380
1,450	20,980
1,500	21,570
1,550	22,160
1,600	22,740
1,650	23,320
1,700	23,900
1,750	24,470
1,800	25,050
1,850	25,620
1,900	26,180
1,950	26,750
2,000	27,310

Surface area = total outside surface area of container in square feet.

When the surface area is not stamped on the nameplate or when the marking is not legible, the area can be calculated by using one of the following formulas:

(1) Cylindrical container with hemispherical heads:

Area = Overall length x outside diameter x 3.1416.

(2) Cylindrical container with other than hemispherical heads:

Area = (Overall length + 0.3 outside diameter) x outside diameter x 3.1416.

Note: This formula is not exact, but will give results within the limits of practical accuracy for the sole purpose of sizing relief valves.

(3) Spherical container:

Area = Outside diameter squared x 3.1416.

Flow rate–CFM air = Required flow capacity in cubic feet per minute of air at standard conditions, 60°F and atmospheric pressure (14.7 p.s.i.a.).

The rate of discharge may be interpolated for intermediate values of surface area. For containers with total outside surface area greater than 2,000 square feet, the required flow rate can be calculate [calculated] using the formula, flow rate–CFM air = $53.632\ A^{0.82}$.

A = Total outside surface area of the container in square feet.

Valves not marked "air" have flow rate marking in cubic feet per minute of liquefied petroleum gas. These can be converted to ratings in cubic feet per minute of air by multiplying the liquefied petroleum gas ratings by factors listed below. Air flow ratings can be converted to ratings in cubic feet per minute of liquefied petroleum gas by dividing the air ratings by the factors listed below.

AIR CONVERSION FACTORS

Container type	100	125	150	175	200
Air conversion factor	1.162	1.142	1.113	1.078	1.010

(c) Minimum required rate of discharge for safety relief valves for liquefied petroleum gas vaporizers (steam heated, water heated, and direct fired).

The minimum required rate of discharge for safety relief valves shall be determined as follows:

(i) Obtain the total surface area by adding the surface area of vaporizer shell in square feet directly in contact with LP–gas and the heat exchanged surface area in square feet directly in contact with LP–gas.

(ii) Obtain the minimum required rate of discharge in cubic feet of air per minute, at 60°F and 14.7 p.s.i.a. from (10)(b) of this section, for this total surface area.

(d) Container and vaporizer safety relief valves shall be set to start–to–discharge, with relation to the design pressure of the container, in accordance with Table H–26.

TABLE H–26

Containers	Minimum (percent)	Maximum (percent)
ASME Code; Par. U–68, U–69—1949 and earlier editions	110	[1]125
ASME Code; Par. U–200, U–201—1949 edition	88	[1]100
ASME Code—1950, 1952, 1956, 1959, 1962, 1965 and 1968 (Division I) editions	88	[1]100
API—ASME Code—all editions	88	[1]100
DOT—As prescribed in 49 CFR Chapter I		

[1]Manufacturers of safety relief valves are allowed a plus tolerance not exceeding 10 percent of the set pressure marked on the valve.

(e) Safety relief devices used with systems employing containers other than those constructed according to DOT specifications shall be so constructed as to discharge at not less than the rates shown in (10)(b) of this section, before the pressure is in excess of 120 percent of the maximum (not including the 10 percent referred to in (10)(d) of this section) permitted start to discharge pressure setting of the device.

(f) In certain locations sufficiently sustained high temperatures prevail which require the use of a lower vapor pressure product to be stored or the use of a higher designed pressure vessel in order to prevent the safety valves opening as the result of these temperatures. As an alternative the tanks may be protected by cooling devices such as by spraying, by shading, or other effective means.

(g) Safety relief valves shall be arranged so that the possibility of tampering will be minimized. If pressure setting or adjustment is external, the relief valves shall be provided with approved means for sealing adjustment.

(h) Shutoff valves shall not be installed between the safety relief devices and the container, or the equipment or piping to which the safety relief device is connected except that a shutoff valve may be used where the arrangement of this valve is such that full required capacity flow through the safety relief device is always afforded.

(i) Safety relief valves shall have direct communication with the vapor space of the container at all times.

(j) Each container safety relief valve used with systems covered by WAC 296–24–47509, 296–24–47511, 296–24–47515 and 296–24–47517, except as provided in WAC 296–24–47511 (3)(c) shall be plainly and permanently marked with the following: "Container type" of the pressure vessel on which the valve is designed to be installed; the pressure in p.s.i.g. at which the valve is set to discharge; the actual rate of discharge of the valve in cubic feet per minute of air at 60°F and 14.7 p.s.i.a.; and the manufacturer's name and catalog number, for example: T200–250–4050 AIR—indicating that the valve is suitable for use on a Type 200 container, that it is set to start to discharge at 250 p.s.i.g.; and that its rate of discharge is 4,050 cubic feet per minute of air as determined in (10)(b) of this section.

(k) Safety relief valve assemblies, including their connections, shall be of sufficient size so as to provide the rate of flow required for the container on which they are installed.

(l) A hydrostatic relief valve shall be installed between each pair of shutoff valves on liquefied petroleum gas liquid piping so as to relieve into a safe atmosphere. The start–to–discharge pressure setting of such relief valves shall not be in excess of 500 p.s.i.g. The minimum setting on relief valves installed in piping connected to other than DOT containers shall not be lower than 140 percent of the container relief valve setting and in piping connected to DOT containers not lower than 400 p.s.i.g. Such a relief valve should not be installed in the pump discharge piping if the same protection can be provided by installing the relief valve in the suction piping. The start–to–discharge pressure setting of such a relief valve, if installed on the discharge side of a pump, shall be greater than the maximum pressure permitted by the recirculation device in the system.

(m) The discharge from any safety relief device shall not terminate in or beneath any building, except relief devices covered by (6)(a)(i) to (vi) of this section, or WAC 296–24–47507 (4)(a) or (5).

(n) Container safety relief devices and regulator relief vents shall be located not less than five feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(11) Vaporizer and housing.

(a) Indirect fired vaporizers utilizing steam, water, or other heating medium shall be constructed and installed as follows:

(i) Vaporizers shall be constructed in accordance with the requirements of (3)(a) to (c) of this section and shall be permanently marked as follows:

(A) With the code marking signifying the specifications to which the vaporizer is constructed.

(B) With the allowable working pressure and temperature for which the vaporizer is designed.

(C) With the sum of the outside surface area and the inside heat exchange surface area expressed in square feet.

(D) With the name or symbol of the manufacturer.

(ii) Vaporizers having an inside diameter of 6 inches or less exempted by the ASME Unfired Pressure Vessel Code, Section VIII of the ASME Boiler and Pressure Vessel Code—1968 shall have a design pressure not less than 250 p.s.i.g. and need not be permanently marked.

(iii) Heating or cooling coils shall not be installed inside a storage container.

(iv) Vaporizers may be installed in buildings, rooms, sheds, or lean-tos used exclusively for gas manufacturing or distribution, or in other structures of light, noncombustible construction or equivalent, well ventilated near the floor line and roof.

When vaporizing and/or mixing equipment is located in a structure or building not used exclusively for gas manufacturing or distribution, either attached to or within such a building, such structure or room shall be separated from the remainder of the building by a wall designed to withstand a static pressure of at least 100 pounds per square foot. This wall shall have no openings or pipe or conduit passing through it. Such structure or room shall be provided with adequate ventilation and shall have a roof or at least one exterior wall of lightweight construction.

(v) Vaporizers shall have, at or near the discharge, a safety relief valve providing an effective rate of discharge in accordance with (10)(c) of this section, except as provided in WAC 296-24-47509 (4)(e)(i).

(vi) The heating medium lines into and leaving the vaporizer shall be provided with suitable means for preventing the flow of gas into the heat systems in the event of tube rupture in the vaporizer. Vaporizers shall be provided with suitable automatic means to prevent liquid passing through the vaporizers to the gas discharge piping.

(vii) The device that supplies the necessary heat for producing steam, hot water, or other heating medium may be installed in a building, compartment, room, or lean-to which shall be ventilated near the floorline and roof to the outside. The device location shall be separated from all compartments or rooms containing liquefied petroleum gas vaporizers, pumps, and central gas mixing devices by a wall designed to withstand a static pressure of at least 100 pounds per square foot. This wall shall have no openings or pipes or conduit passing through it. This requirement does not apply to the domestic water heaters which may supply heat for a vaporizer in a domestic system.

(viii) Gas-fired heating systems supplying heat exclusively for vaporization purposes shall be equipped with automatic safety devices to shut off the flow of gas to main burners, if the pilot light should fail.

(ix) Vaporizers may be an integral part of a fuel storage container directly connected to the liquid section or gas section or both.

(x) Vaporizers shall not be equipped with fusible plugs.

(xi) Vaporizer houses shall not have unprotected drains to sewers or sump pits.

(b) Atmospheric vaporizers employing heat from the ground or surrounding air shall be installed as follows:

(i) Buried underground, or

(ii) Located inside the building close to a point at which pipe enters the building provided the capacity of the unit does not exceed 1 quart.

(iii) Vaporizers of less than 1 quart capacity heated by the ground or surrounding air, need not be equipped with safety relief valves provided that adequate tests demonstrate that the assembly is safe without safety relief valves.

(c) Direct gas-fired vaporizers shall be constructed, marked, and installed as follows:

(i) In accordance with the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code—1968 that are applicable to the maximum working conditions for which the vaporizer is designed.

(ii) With the name of the manufacturer; rated BTU input to the burner; the area of the heat exchange surface in square feet; the outside surface of the vaporizer in square feet; and the maximum vaporizing capacity in gallons per hour.

(iii) Vaporizers may be connected to the liquid section or the gas section of the storage container, or both; but in any case there shall be at the container a manually operated valve in each connection to permit completely shutting off when desired, of all flow of gas or liquid from container to vaporizer.

(iv) Vaporizers with capacity not exceeding 35 gallons per hour shall be located at least 5 feet from container shutoff valves. Vaporizers having capacity of more than 35 gallons but not exceeding 100 gallons per hour shall be located at least 10 feet from the container shutoff valves. Vaporizers having a capacity greater than 100 gallons per hour shall be located at least 15 feet from container shutoff valves.

(v) Vaporizers may be installed in buildings, rooms, housings, sheds, or lean-tos used exclusively for vaporizing or mixing of liquefied petroleum gas. Vaporizing housing structures shall be of noncombustible construction, well ventilated near the floorline and the highest point of the roof. When vaporizer and/or mixing equipment is located in a structure or room attached to or within a building, such structure or room shall be separated from the remainder of the building by a wall designed to withstand a static pressure of at least 100 pounds per square foot. This wall shall have no openings or pipes or conduit passing through it. Such structure or room shall be provided with adequate ventilation, and shall have a roof or at least one exterior wall of lightweight construction.

(vi) Vaporizers shall have at or near the discharge, a safety relief valve providing an effective rate of discharge in accordance with (10)(c) of this section. The relief valve shall be so located as not to be subjected to temperatures in excess of 140°F.

(vii) Vaporizers shall be provided with suitable automatic means to prevent liquid passing from the vaporizer to the gas discharge piping of the vaporizer.

(viii) Vaporizers shall be provided with means for manually turning off the gas to the main burner and pilot.

(ix) Vaporizers shall be equipped with automatic safety devices to shut off the flow of gas to main burners if the pilot light should fail. When the flow through the pilot exceeds 2,000 B.T.U. per hour, the pilot also shall be equipped with an automatic safety device to shut off the flow of gas to the pilot should the pilot flame be extinguished.

(x) Pressure regulating and pressure reducing equipment if located within 10 feet of a direct fired vaporizer shall be separated from the open flame by a substantially airtight noncombustible partition or partitions.

(xi) Except as provided in (11)(c)(v), of this section, the following minimum distances shall be maintained between direct fired vaporizers and the nearest important building or group of buildings or line of adjoining property which may be built upon:

Ten feet for vaporizers having a capacity of 15 gallons per hour or less vaporizing capacity.

Twenty–five feet for vaporizers having a vaporizing capacity of 16 to 100 gallons per hour.

Fifty feet for vaporizers having a vaporizing capacity exceeding 100 gallons per hour.

(xii) Direct fired vaporizers shall not raise the product pressure above the design pressure of the vaporizer equipment nor shall they raise the product pressure within the storage container above the pressure shown in the second column of Table H–31. (See WAC 296–24–47509.)

(xiii) Vaporizers shall not be provided with fusible plugs.

(xiv) Vaporizers shall not have unprotected drains to sewers or sump pits.

(d) Direct gas–fired tank heaters, shall be constructed and installed as follows:

(i) Direct gas–fired tank heaters, and tanks to which they are applied, shall only be installed above ground.

(ii) Tank heaters shall be permanently marked with the name of the manufacturer, the rated B.T.U. input to the burner, and the maximum vaporizing capacity in gallons per hour.

Note: Tank heaters may be an integral part of a fuel storage container directly connected to the container liquid section, or vapor section, or both.

(iii) Tank heaters shall be provided with a means for manually turning off the gas to the main burner and pilot.

(iv) Tank heaters shall be equipped with an automatic safety device to shut off the flow of gas to main burners, if the pilot light should fail. When flow through pilot exceeds 2,000 B.T.U. per hour, the pilot also shall be equipped with an automatic safety device to shut off the flow of gas to the pilot should the pilot flame be extinguished.

(v) Pressure regulating and pressure reducing equipment if located within 10 feet of a direct fired tank heater shall be separated from the open flame by a substantially airtight noncombustible partition.

(vi) The following minimum distances shall be maintained between a storage tank heated by a direct fired tank heater and the nearest important building or group of buildings or line of adjoining property which may be built upon:

Ten feet for storage containers of less than 500 gallons water capacity.

Twenty–five feet for storage containers of 500 to 1,200 gallons water capacity.

Fifty feet for storage containers of over 1,200 gallons water capacity.

(vii) No direct fired tank heater shall raise the product pressure within the storage container over 75 percent of the pressure set out in the second column of Table H–31. (See WAC 296–24–47509.)

(e) The vaporizer section of vaporizer–burners used for dehydrators or dryers shall be located outside of buildings; they shall be constructed and installed as follows:

(i) Vaporizer–burners shall have a minimum design pressure of 250 p.s.i.g. with a factor of safety of five.

(ii) Manually operated positive shutoff valves shall be located at the containers to shut off all flow to the vaporizer–burners.

(iii) Minimum distances between storage containers and vaporizer–burners shall be as follows:

Water capacity per container (gallons)	Minimum distances (feet)
Less than 501	10
501 to 2,000	25
Over 2,000	50

(iv) The vaporizer section of vaporizer–burners shall be protected by a hydrostatic relief valve. The relief valve shall be located so as not to be subjected to temperatures in excess of 140°F. The start–to–discharge pressure setting shall be such as to protect the components involved, but not less than 250 p.s.i.g. The discharge shall be directed upward and away from component parts of the equipment and away from operating personnel.

(v) Vaporizer–burners shall be provided with means for manually turning off the gas to the main burner and pilot.

(vi) Vaporizer–burners shall be equipped with automatic safety devices to shut off the flow of gas to the main burner and pilot in the event the pilot is extinguished.

(vii) Pressure regulating and control equipment shall be located or protected so that the temperatures surrounding this equipment shall not exceed 140°F except that equipment components may be used at higher temperatures if designed to withstand such temperatures.

(viii) Pressure regulating and control equipment when located downstream of the vaporizer shall be designed to withstand the maximum discharge temperature of the vapor.

(ix) The vaporizer section of vaporizer–burners shall not be provided with fusible plugs.

(x) Vaporizer coils or jackets shall be made of ferrous metal or high temperature alloys.

(xi) Equipment utilizing vaporizer–burners shall be equipped with automatic shutoff devices upstream and downstream of the vaporizer section connected so as to operate in the event of excessive temperature, flame failure, and, if applicable, insufficient airflow.

(12) Filling densities.

(a) The "filling density" is defined as the percent ratio of the weight of the gas in a container to the weight of water the container will hold at 60°F. All containers shall be filled according to the filling densities shown in Table H–27.

TABLE H–27

MAXIMUM PERMITTED FILLING DENSITY

Specific gravity at 60°F (15.6°C)	Above ground containers: 0 to 1,200 U.S. gals. (1,000 imp. gal. 4,550 liters) total water cap.	Above ground containers: Over 1,200 U.S. gals. (1,000 imp. gals. 4,550 liters) total water cap.	Underground containers, all capacities
	Percent	Percent	Percent
0.496–0.503	41	44	45
.504–.510	42	45	46
.511–.519	43	46	47
.520–.527	44	47	48
.528–.536	45	48	49
.537–.544	46	49	50
.545–.552	47	50	51
.553–.560	48	51	52
.561–.568	49	52	53
.569–.576	50	53	54
.577–.584	51	54	55
.585–.592	52	55	56
.593–.600	53	56	57

(b) Except as provided in (12)(c) of this section, any container including mobile cargo tanks and portable tank containers regardless of size or construction, shipped under DOT jurisdiction or constructed in accordance with 49 CFR Chapter I Specifications shall be charged according to 49 CFR Chapter I requirements.

(c) Portable containers not subject to DOT jurisdiction (such as, but not limited to, motor fuel containers on industrial and lift trucks, and farm tractors covered in (5) of this section, or containers recharged at the installation) may be filled either by weight, or by volume using a fixed length dip tube gaging device.

(13) LP–gas in buildings.

(a) Vapor shall be piped into buildings at pressures in excess of 20 p.s.i.g. only if the buildings or separate areas thereof, (i) are constructed in accordance with this section; (ii) are used exclusively to house equipment for vaporization, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and having similar hazard; (iii) buildings, structures, or equipment under construction or undergoing major renovation.

(b) Liquid may be permitted in buildings as follows:

(i) Buildings, or separate areas of buildings, used exclusively to house equipment for vaporization, pressure reduction, gas mixing, gas manufacturing, or distribution, or to house internal combustion engines, industrial processes, research and experimental laboratories, or equipment and processes using such gas and having similar hazard; and when such buildings, or separate areas thereof are constructed in accordance with this section.

(ii) Buildings, structures, or equipment under construction or undergoing major renovation provided the temporary piping meets the following conditions:

(A) Liquid piping inside the building shall conform to the requirements of (8) of this section, and shall not exceed three–fourths iron pipe size. Copper tubing with an outside diameter of three–fourths inch or less may be used provided it conforms to Type K of Specifications for Seamless Water Tube, ANSI H23.1–1970 (ASTM B88–1969) (see WAC 296–24–47505 Table H–24). All such piping shall be protected against construction hazards. Liquid piping inside buildings shall be kept to a minimum. Such piping shall be securely fastened to walls or other surfaces so as to provide adequate protection from breakage and so located as to subject the liquid line to lowest ambient temperatures.

(B) A shutoff valve shall be installed in each intermediate branch line where it takes off the main line and shall be readily accessible. A shutoff valve shall also be placed at the appliance end of the intermediate branch line. Such shutoff valve shall be upstream of any flexible connector used with the appliance.

(C) Suitable excess flow valves shall be installed in the container outlet line supplying liquid LP–gas to the building. A suitable excess flow valve shall be installed immediately downstream of each shutoff valve. Suitable excess flow valves shall be installed where piping size is reduced and shall be sized for the reduced size piping.

(D) Hydrostatic relief valves shall be installed in accordance with (10)(1) of this section.

(E) The use of hose to carry liquid between the container and the building or at any point in the liquid line, except at the appliance connector, shall be prohibited.

(F) Where flexible connectors are necessary for appliance installation, such connectors shall be as short as practicable and shall comply with (8)(b) or (9) of this section.

(G) Release of fuel when any section of piping or appliances is disconnected shall be minimized by either of the following methods:

(aa) Using an approved automatic quick-closing coupling (a type closing in both directions when coupled in the fuel line), or

(bb) Closing the valve nearest to the appliance and allowing the appliance to operate until the fuel in the line is consumed.

(cc) Portable containers shall not be taken into buildings except as provided in (6)(a) of this section.

(14) Transfer of liquids. The employer shall assure that (a) at least one attendant shall remain close to the transfer connection from the time the connections are first made until they are finally disconnected, during the transfer of the product.

(b) Containers shall be filled or used only upon authorization of the owner.

(c) Containers manufactured in accordance with specifications of 49 CFR Part 178 and authorized by 49 CFR Chapter 1 as a "single trip" or "nonrefillable container" shall not be refilled or reused in LP-gas service.

(d) Gas or liquid shall not be vented to the atmosphere to assist in transferring contents of one container to another, except as provided in WAC 296-24-47511 (5)(d) and except that this shall not preclude the use of listed pump utilizing LP-gas in the vapor phase as a source of energy and venting such gas to the atmosphere at a rate not to exceed that from a No. 31 drill size opening and provided that such venting and liquid transfer shall be located not less than 50 feet from the nearest important building.

(e) Filling of fuel containers for industrial trucks or motor vehicles from industrial bulk storage containers shall be performed not less than 10 feet from the nearest important masonry-walled building or not less than 25 feet from the nearest important building or other construction and, in any event, not less than 25 feet from any building opening.

(f) Filling of portable containers, containers mounted on skids, fuel containers on farm tractors, or similar applications, from storage containers used in domestic or commercial service, shall be performed not less than 50 feet from the nearest important building.

(g) The filling connection and the vent from the liquid level gages in containers, filled at point of installation, shall not be less than 10 feet in any direction from air openings into sealed combustion system appliances or mechanical ventilation air intakes.

(h) Fuel supply containers shall be gaged and charged only in the open air or in buildings especially provided for that purpose.

(i) The maximum vapor pressure of the product at 100°F which may be transferred into a container shall be in accordance with WAC 296-24-47509(2) and 296-24-47511(3). (For DOT containers use DOT requirements.)

(j) Marketers and users shall exercise precaution to assure that only those gases for which the system is designed, examined, and listed, are employed in its operation, particularly with regard to pressures.

(k) Pumps or compressors shall be designed for use with LP-gas. When compressors are used they shall normally take suction from the vapor space of the container being filled and discharge to the vapor space of the container being emptied.

(l) Pumping systems, when equipped with a positive displacement pump, shall include a recirculating device which shall limit the differential pressure on the pump under normal operating conditions to the maximum differential pressure rating of the pump. The discharge of the pumping system shall be protected so that pressure does not exceed 350 p.s.i.g. If a recirculation system discharges into the supply tank and contains a manual shutoff valve, an adequate secondary safety recirculation system shall be incorporated which shall have no means of rendering it inoperative. Manual shutoff valves in recirculation systems shall be kept open except during an emergency or when repairs are being made to the system.

(m) When necessary, unloading piping or hoses shall be provided with suitable bleeder valves for relieving pressure before disconnection.

(n) Agricultural air moving equipment, including crop dryers, shall be shut down when supply containers are being filled unless the air intakes and sources of ignition on the equipment are located 50 feet or more from the container.

(o) Agricultural equipment employing open flames or equipment with integral containers, such as flame cultivators, weed burners, and, in addition, tractors, shall be shut down during refueling.

(15) Tank car or transport truck loading or unloading points and operations.

(a) The track of tank car siding shall be relatively level.

(b) A "tank car connected" sign, as covered by DOT rules, shall be installed at the active end or ends of the siding while the tank car is connected.

(c) While cars are on side track for loading or unloading, the wheels at both ends shall be blocked on the rails.

(d) The employer shall insure that an employee is in attendance at all times while the tank car, cars, or trucks are being loaded or unloaded.

(e) A backflow check valve, excess-flow valve, or a shutoff valve with means of remote closing, to protect against uncontrolled discharge of LP-gas from storage tank piping shall be installed close to the point where the liquid piping and hose or swing joint pipe is connected.

(f) Except as provided in (15)(g) of this section, when the size (diameter) of the loading or unloading hoses and/or piping is reduced below the size of the tank car or transport truck loading or unloading connections, the adaptors to which lines are attached shall be equipped with either a backflow check valve, a properly sized excess flow valve, or shutoff valve with means of remote closing, to protect against uncontrolled discharge from the tank car or transport truck.

(g) The requirement of (15)(f) of this section shall not apply if the tank car or transport is equipped with a quick-closing internal valve that can be remotely closed.

(h) The tank car or transport truck loading or unloading point shall be located with due consideration to the following:

(i) Proximity to railroads and highway traffic.

(ii) The distance of such unloading or loading point from adjacent property.

(iii) With respect to buildings on installer's property.

(iv) Nature of occupancy.

(v) Topography.

(vi) Type of construction of buildings.

(vii) Number of tank cars or transport trucks that may be safely loaded or unloaded at one time.

(viii) Frequency of loading or unloading.

(i) Where practical, the distance of the unloading or loading point shall conform to the distances in (6)(b) of this section.

(16) Instructions. Personnel performing installation, removal, operation, and maintenance work shall be properly trained in such function.

(17) Electrical equipment and other sources of ignition. (a) Electrical equipment and wiring shall be of a type specified by and shall be installed in accordance with WAC 296-24-956 through 296-24-960, for ordinary locations except that fixed electrical equipment in classified areas shall comply with (18) of this section.

(b) Open flames or other sources of ignition shall not be permitted in vaporizer rooms (except those housing direct-fired vaporizers), pumphouses, container charging rooms or other similar locations. Direct-fired vaporizers shall not be permitted in pumphouses or container charging rooms.

Note: Liquefied petroleum gas storage containers do not require lightning protection. Since liquefied petroleum gas is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity (see NFPA No. 77-1972-1973, Recommended Practice for Static Electricity).

(c) Open flames (except as provided for in (17)(b) of this section), cutting or welding, portable electric tools, and extension lights capable of igniting LP-gas, shall not be permitted within classified areas specified in Table H-28 (see WAC 296-24-47505) unless the LP-gas facilities have been freed of all liquid and vapor, or special precautions observed under carefully controlled conditions.

(18) Fixed electrical equipment in classified areas. Fixed electrical equipment and wiring installed within classified areas shall comply with Table H-28 (see WAC 296-24-47505) and shall be installed in accordance with WAC 296-24-956 through 296-24-960. This provision does not apply to fixed electrical equipment at residential or commercial installations of LP-gas systems or to systems covered by WAC 296-24-47511 or 296-24-47515.

(19) Liquid-level gaging device.

(a) Each container manufactured after December 31, 1965, and filled on a volumetric basis shall be equipped with a fixed liquid-level gage to indicate the maximum permitted filling level as provided in (19)(e) of this section. Each container manufactured after December 31, 1969, shall have permanently attached to the container adjacent to the fixed level gage a marking showing the percentage full that will be shown by that gage. When a variable liquid-level gage is also provided, the fixed liquid-level gage will also serve as a means for checking the variable gage. These gages shall be used in charging containers as required in (12) of this section.

(b) All variable gaging devices shall be arranged so that the maximum liquid level for butane, for a 50-50 mixture of butane and propane, and for propane, to which the container may be charged is readily determinable. The markings indicating the various liquid levels from empty to full shall be on the system nameplate or gaging device or part may be on the system nameplate and part on the gaging device. Dials of magnetic or rotary gages shall show whether they are for cylindrical or spherical containers and whether for aboveground or underground service. The dials of gages intended for use only on aboveground containers of over 1,200 gallons water capacity shall be so marked.

(c) Gaging devices that require bleeding of the product to the atmosphere, such as the rotary tube, fixed tube, and slip tube, shall be designed so that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with excess flow valve.

(d) Gaging devices shall have a design working pressure of at least 250 p.s.i.g.

(e) Length of tube or position of fixed liquid-level gage shall be designed to indicate the maximum level to which the container may be filled for the product contained. This level shall be based on the volume of the product at 40°F at its maximum permitted filling density for aboveground containers and at 50°F for underground containers. The employer shall calculate the filling point for which the fixed liquid level gage shall be designed according to the method in this subsection.

TABLE H-28

Part	Location	Extent of classified area[1]	Equipment shall be suitable for National Electrical Code, Class 1, Group D[2]
A	Storage containers other than DOT cylinders.	Within 15 feet in all directions from connections, except connections otherwise covered in Table H-28.	Division 2.
B	Tank vehicle and tank car loading and unloading.[3]	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from a point where connections are regularly made or disconnected and within the	Division 2.

TABLE H-28

Part	Location	Extent of classified area[1]	Equipment shall be suitable for National Electrical Code, Class 1, Group D[2]
		cylindrical volume between the horizontal equator of the sphere and grade. (See Figure H-1.)	
C	Gage vent openings other than those on DOT cylinders.	Within 5 feet in all directions from point of discharge.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from point of discharge.	Division 2.
D	Relief valve discharge other than those on DOT cylinders.	Within direct path of discharge.	Division 1. NOTE—Fixed electrical equipment should preferably not be installed.
		Within 5 feet in all directions from point of discharge.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from point of discharge except within the direct path of discharge.	Division 2.
E	Pumps, compressors, gas–air mixers and vaporizers other than direct fired.		
	Indoors without ventilation	Entire room and any adjacent room not separated by a gastight partition.	Division 1.
		Within 15 feet of the exterior side of any exterior wall or roof that is not vaportight or within 15 feet of any exterior opening.	Division 2.
	Indoors with adequate ventilation.[4]	Entire room and any adjacent room not separated by a gastight partition.	Division 2.
	Outdoors in open air at or abovegrade.	Within 15 feet n all directions from this equipment and within the cylindrical volume between the horizontal equator of the sphere and grade. See Figure H-1.	Division 2.
F	Service station dispensing units.	Entire space within dispenser enclosure, and 18 inches horizontally from enclosure exterior up to an elevation 4 ft. above dispenser base. Entire pit or open space beneath dispenser.	Division 1.
		Up to 18 inches abovegrade within 20 ft. horizontally from any edge of enclosure.	Division 2.
		NOTE: For pits within this area, see Part F of this table.	
G	Pits or trenches containing or located beneath LP–gas valves, pumps, compressors, regulators, and similar equipment.		
	Without mechanical ventilation.	Entire pit or trench	Division 1.
		Entire room and any adjacent room not separated by a gastight partition.	Division 2.
		Within 15 feet in all directions from pit or trench when located outdoors.	Division 2.
	With adequate mechanical ventilation.	Entire pit or trench	Division 2.
		Entire room and any adjacent room not separated by a gastight partition.	Division 2.
		Within 15 feet in all directions from pit or trench when located outdoors.	Division 2.

TABLE H-28

Part	Location	Extent of classified area[1]	Equipment shall be suitable for National Electrical Code, Class 1, Group D[2]
H	Special buildings or rooms for storage of portable containers.	Entire room	Division 2.
I	Pipelines and connections containing operational bleeds, drips, vents or drains.	Within 5 ft. in all directions from point of discharge.	Division 1.
		Beyond 5 ft. from point of discharge, same as Part E of this table.	
J	Container filling: Indoors without ventilation.	Entire room	Division 1.
	Indoors with adequate ventilation.[4]	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet and entire room	Division 2.
	Outdoors in open air	Within 5 feet in all directions from connections regularly made or disconnected for product transfer.	Division 1.
		Beyond 5 feet but within 15 feet in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and grade (See Fig. H-1.)	Division 2.

[1]The classified area shall not extend beyond an unpierced wall, roof, or solid vaportight partition.

[2]See chapter 296-46 WAC, and WAC 296-24-956 through 296-24-960.

[3]When classifying extent of hazardous area, consideration shall be given to possible variations in the spotting of tank cars and tank vehicles at the unloading points and the effect these variations of actual spotting point may have on the point of connection.

[4]Ventilation, either natural or mechanical, is considered adequate when the concentration of the gas in a gas-air mixture does not exceed 25 percent of the lower flammable limit under normal operating conditions.

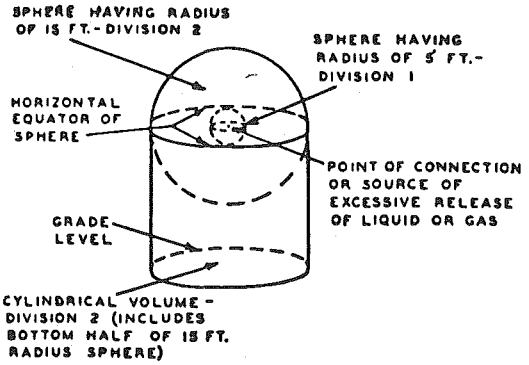


Figure H-1

Note: It is impossible to set out in a table the length of a fixed dip tube for various capacity tanks because of the varying tank diameters and lengths and because the tank may be installed either in a vertical or horizontal position. Knowing the maximum permitted filling volume in gallons, however, the length of the fixed tube can be determined by the use of a strapping table obtained from the container manufacturer. The length of the fixed tube should be such that when its lower end touches the surface of the liquid in the container, the contents of the container will be the maximum permitted volume as determined by the following formula:

$$\frac{\text{Water capacity (gals.) of container* x filling density**}}{\text{Specific gravity of LP-gas* x volume correction factor*** x 100}} = \text{Maximum volume of LP-gas}$$

*Measure at 60°F.

**From (12(a)) of this section "filling densities."

***For aboveground containers the liquid temperature is assumed to be 40°F and for underground containers the liquid temperature is assumed to be 50°F. To correct the liquid volumes at these temperatures to 60°F. the following factors shall be used.

(i) Formula for determining maximum volume of liquefied petroleum gas for which a fixed length of dip tube shall be set:

TABLE H-29

VOLUME CORRECTION FACTORS

Specific gravity	Aboveground	Underground
0.500	1.033	1.017
.510	1.031	1.016
.520	1.029	1.015
.530	1.028	1.014
.540	1.026	1.013
.550	1.025	1.013
.560	1.024	1.012
.570	1.023	1.011

TABLE H-29

VOLUME CORRECTION FACTORS

Specific gravity	Aboveground	Underground
.580	1.021	1.011
.590	1.020	1.010

(ii) The maximum volume of LP–gas which can be placed in a container when determining the length of the dip tube expressed as a percentage of total water content of the container is calculated by the following formula.

(iii) The maximum weight of LP–gas which may be placed in a container for determining the length of a fixed dip tube is determined by multiplying the maximum volume of liquefied petroleum gas obtained by the formula in (19)(e)(i) of this section by the pounds of liquefied petroleum gas in a gallon at 40°F for aboveground and at 50°F for underground containers. For example, typical pounds per gallon are specified below:

Example: Assume a 100–gallon total water capacity tank for aboveground storage of propane having a specific gravity of 0.510 of 60°F.

$$\frac{\text{100 (gals.) x 42 (filling density from (12)(a) of this section)}}{\text{0.510 x 1.031 (correction factor from Table H–29) x 100}} = \frac{4200}{52.6}$$

$$\frac{4200}{52.6} = \text{79.8 gallons propane, the maximum amount permitted to be placed in a 100–gallon total water capacity aboveground container equipped with a fixed dip tube.}$$

$$\frac{\text{Maximum volume of LP–gas (from formula in (19)(e)(i) of this section) x 100}}{\text{Total water content of container in gallons.}} = \text{Maximum percent of LP–gas}$$

	Aboveground, pounds per gallon	Underground, pounds per gallon
Propane	4.37	4.31
N Butane	4.97	4.92

(f) Fixed liquid–level gages used on containers other than DOT containers shall be stamped on the exterior of the gage with the letters "DT" followed by the vertical distance (expressed in inches and carried out to one decimal place) from the top of container to the end of the dip tube or to the centerline of the gage when it is located at the maximum permitted filling level. For portable containers that may be filled in the horizontal and/or vertical position the letters "DT" shall be followed by "V" with the vertical distance from the top of the container to the end of the dip tube for vertical filling and with "H" followed by the proper distance for horizontal filling. For DOT containers the stamping shall be placed both on the exterior of the gage and on the container. On aboveground or cargo containers where the gages are positioned at specific levels, the marking may be specified in percent of total tank contents and the marking shall be stamped on the container.

(g) Gage glasses of the columnar type shall be restricted to charging plants where the fuel is withdrawn in the liquid phase only. They shall be equipped with valves having metallic handwheels, with excess flow valves, and with extra–heavy glass adequately protected with a metal housing applied by the gage manufacturer. They shall be shielded against the direct rays of the sun. Gage glasses of the columnar type are prohibited on tank trucks, and on motor fuel tanks, and on containers used in domestic, commercial, and industrial installations.

(h) Gaging devices of the float, or equivalent type which do not require flow for their operation and having connections extending to a point outside the container do not have to be equipped with excess flow valves provided the piping and fittings are adequately designed to withstand the container pressure and are properly protected against physical damage and breakage.

(20) Requirements for appliances.

(a) Except as provided in (20)(b) of this section, new commercial and industrial gas consuming appliances shall be approved.

(b) Any appliance that was originally manufactured for operation with a gaseous fuel other than LP–gas and is in good condition may be used with LP–gas only after it is properly converted, adapted, and tested for performance with LP–gas before the appliance is placed in use.

(c) Unattended heaters used inside buildings for the purpose of animal or poultry production or care shall be equipped with an approved automatic device designed to shut off the flow of gas to the main burners, and pilot if used, in the event of flame extinguishment.

(d) All commercial, industrial, and agricultural appliances or equipment shall be installed in accordance with the requirements of these standards and in accordance with the following:

(i) Domestic and commercial appliances—NFPA 54–1969, Standard for the Installation of Gas Appliances and Gas Piping.

(ii) Industrial appliances—NFPA 54A–1969, Standard for the Installation of Gas Piping and Gas Equipment on Industrial Premises and Certain Other Premises.

(iii) Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines—NFPA 37–1970.

(iv) Standard for the Installation of Equipment for the Removal of Smoke and Grease–Laden Vapors from Commercial Cooking Equipment, NFPA 96–1970.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 85-10-004 (Order 85-09), § 296-24-47505, filed 4/19/85; Order 76-6, § 296-24-47505, filed 3/1/76; Order 73-5, § 296-24-47505, filed 5/9/73 and Order 73-4, § 296-24-47505, filed 5/7/73.]

WAC 296-24-47507 Cylinder systems. (1) Application. This section applies specifically to systems utilizing containers constructed in accordance with DOT specifications. All requirements of WAC 296-24-47505 apply to this section unless otherwise noted in WAC 296-24-47505.

(2) Marking of containers.

(a) Containers shall be marked in accordance with DOT regulations. Additional markings not in conflict with DOT regulations may be used.

(b) Except as provided in (2)(c) of this section each container shall be marked with its water capacity in pounds or other identified unit of weight.

(c) If a container is filled and maintained only by the owner or his representative and if the water capacity of each container is identified by a code, compliance with (2)(b) of this section is not required.

(d) Each container shall be marked with its tare weight in pounds or other identified unit of weight including all permanently attached fittings but not the cap.

(3) Description of a system. A system shall include the container base or bracket, containers, container valves, connectors, manifold valve assembly, regulators, and relief valves.

(4) Containers and regulating equipment installed outside of buildings or structures.

(a) Containers shall not be buried below ground. However, this shall not prohibit the installation in a compartment or recess below grade level, such as a niche in a slope or terrace wall which is used for no other purpose, providing that the container and regulating equipment are not in contact with the ground and the compartment or recess is drained and ventilated horizontally to the outside air from its lowest level, with the outlet at least 3 feet away from any building opening which is below the level of such outlet.

Except as provided in WAC 296-24-47505 (10)(m), the discharge from safety relief devices shall be located not less than 3 feet horizontally away from any building opening which is below the level of such discharge and shall not terminate beneath any building unless such space is well ventilated to the outside and is not enclosed on more than two sides.

(b) Containers shall be set upon firm foundation or otherwise firmly secured; the possible effect on the outlet piping of settling shall be guarded against by a flexible connection or special fitting.

(5) Containers and equipment used inside of buildings or structures.

(a) When operational requirements make portable use of containers necessary and their location outside of buildings or structure is impracticable, containers and equipment are permitted to be used inside of buildings or structures in accordance with (5)(a)(i) through (xii) of this section, and, in addition, such other provisions of this section as are applicable to the particular use or occupancy.

(i) Containers in use shall mean connected for use.

(ii) Systems utilizing containers having a water capacity greater than 2 1/2 pounds (nominal 1 pound LP-gas capacity) shall be equipped with excess flow valves. Such excess flow valves shall be either integral with the container valves or in the connections to the container valve outlets. In either case, an excess flow valve shall be installed in such a manner that any undue strain beyond the excess flow valve will not cause breakage between the container and the excess flow valve. The installation of excess flow valves shall take into account the type of valve protection provided.

(iii) Regulators, if used, shall be either directly connected to the container valves or to manifolds connected to the container valves. The regulator shall be suitable for use with LP-gas. Manifolds and fittings connecting containers to pressure regulator inlets shall be designed for at least 250 p.s.i.g. service pressure.

(iv) Valves on containers having a water capacity greater than 50 pounds (nominal 20 pounds LP-gas capacity) shall be protected while in use.

(v) Containers shall be marked in accordance with WAC 296-24-47505 (5)(c) and (2) of this section.

(vi) Pipe or tubing shall conform to WAC 296-24-47505(8) except that aluminum pipe or tubing shall not be used.

(vii) Hose shall be designed for a working pressure of at least 250 p.s.i.g. Hose and hose connections shall have their correctness as to design, construction and performance determined by listing by Underwriters Laboratories, Inc., or Factory Mutual Engineering Corp.

(A) The hose length may exceed the length specified in WAC 296-24-47505 (9)(g)(ii), but shall be as short as practicable.

(B) Hose shall be long enough to permit compliance with spacing provisions of this section without kinking or straining or causing hose to be so close to a burner as to be damaged by heat.

(viii) Portable heaters, including salamanders, shall be equipped with an approved automatic device to shut off the flow of gas to the main burner, and pilot if used, in the event of flame extinguishment. Such heaters having inputs above 50,000 B.t.u. manufactured on or after May 17, 1967, and such heaters having inputs above 100,000 B.t.u. manufactured before May 17, 1967, shall be equipped with either:

(A) A pilot which must be lighted and proved before the main burner can be turned on; or

(B) An electric ignition system. The provisions of (5)(viii) of this section do not apply to tar kettle burners, torches, melting pots, nor do they apply to portable heaters under 7,500 B.t.u.h. input when used with containers having a maximum water capacity of 2 1/2 pounds. Container valves, connectors, regulators, manifolds, piping, and tubing shall not be used as structural supports for heaters.

(ix) Containers, regulating equipment, manifolds, pipe, tubing, and hose shall be located so as to minimize exposure to abnormally high temperatures (such as may

result from exposure to convection or radiation from heating equipment or installation in confined spaces), physical damage, or tampering by unauthorized persons.

(x) Heat producing equipment shall be located and used so as to minimize the possibility of ignition of combustibles.

(xi) Containers having water capacity greater than 2 1/2 pounds (nominal 1 pound LP–gas capacity) connected for use, shall stand on a firm and substantially level surface and, when necessary, shall be secured in an upright position.

(xii) Containers, including the valve protective devices, shall be installed so as to minimize the probability of impingement of discharge of safety relief devices upon containers.

(b) Containers having a maximum water capacity of 2 1/2 pounds (nominal 1 pound LP–gas capacity) are permitted to be used inside of buildings as part of approved self–contained hand torch assemblies or similar appliances.

(c) Containers having a maximum water capacity of 12 pounds (nominal 5 pounds LP–gas capacity) are permitted to be used temporarily inside of buildings for public exhibition or demonstration purposes, including use for classroom demonstrations.

(d) When buildings frequented by the public are open to the public, containers are permitted to be used for repair or minor renovation as follows:

(i) The maximum water capacity of individual containers shall be 50 pounds (nominal 20 pounds LP–gas capacity).

(ii) The number of LP–gas containers shall not exceed the number of workmen assigned to using the LP–gas.

(iii) Containers having a water capacity of greater than 2 1/2 pounds (nominal 1 pound LP–gas capacity shall not be left unattended in such buildings.

(e) When buildings frequented by the public are not open to the public, containers are permitted to be used for repair or minor renovations, as follows:

The provisions of (5)(f) of this section shall apply except that containers having a water capacity greater than 2 1/2 pounds (nominal 1 pound LP–gas capacity) shall not be left unattended in such buildings.

(f) Containers are permitted to be used in buildings or structures under construction or undergoing major renovation when such buildings or structures are not occupied by the public, as follows:

(i) The maximum water capacity of individual containers shall be 245 pounds (nominal 100 pounds LP–gas capacity).

(ii) For temporary heating such as curing concrete, drying plaster and similar applications, heaters (other than integral heater–container units) shall be located at least 6 feet from any LP–gas container. This shall not prohibit the use of heaters specifically designed for attachment to the container or to a supporting standard, provided they are designed and installed so as to prevent direct or radiant heat application from the heater onto the container. Blower and radiant type heater shall not be directed toward any LP–gas container within 20 feet.

(iii) If two or more heater–container units, of either the integral or nonintegral type, are located in an unpartitioned area on the same floor, the container or containers of each unit shall be separated from the container or containers of any other unit by at least 20 feet.

(iv) When heaters are connected to containers for use in an unpartitioned area on the same floor, the total water capacity of containers manifolded together for connection to a heater or heaters shall not be greater than 735 pounds (nominal 300 pounds LP–gas capacity). Such manifolds shall be separated by at least 20 feet.

(v) On floors on which heaters are not connected for use, containers are permitted to be manifolded together for connection to a heater or heaters on another floor, Provided:

(A) The total water capacity of containers connected to any one manifold is not greater than 2,450 pounds (nominal 1,000 pounds LP–gas capacity) and;

(B) Where more than one manifold having a total water capacity greater than 735 pounds (nominal 300 pounds LP–gas capacity) are located in the same unpartitioned area, they shall be separated by at least 50 feet.

(vi) Storage of containers awaiting use shall be in accordance with WAC 296–24–47513.

(g) Containers are permitted to be used in industrial occupancies for processing, research, or experimental purposes as follows:

(i) The maximum water capacity of individual containers shall be 245 pounds (nominal 100 pounds LP–gas capacity).

(ii) Containers connected to a manifold shall have a total water capacity not greater than 735 pounds (nominal 300 pounds LP–gas capacity) and not more than one such manifold may be located in the same room unless separated at least 20 feet from a similar unit.

(iii) The amount of LP–gas in containers for research and experimental use shall be limited to the smallest practical quantity.

(h) Containers are permitted to be used in industrial occupancies with essentially noncombustible contents where portable equipment for space heating is essential and where a permanent heating installation is not practical, as follows:

(i) Containers and heaters shall comply with and be used in accordance with (5)(f) of this section.

(i) Containers are permitted to be used in buildings for temporary emergency heating purposes, if necessary to prevent damage to the buildings or contents, when the permanent heating system is temporarily out of service, as follows:

(i) Containers and heaters shall comply with and be used in accordance with (5)(f) of this section.

(ii) The temporary heating equipment shall not be left unattended.

(j) Containers are permitted to be used temporarily in buildings for training purposes related in installation and use of LP–gas systems, as follows:

(i) The maximum water capacity of individual containers shall be 245 pounds (nominal 100 pounds LP–

gas capacity), but the maximum quantity of LP-gas that may be placed in each container shall be 20 pounds.

(ii) If more than one such container is located in the same room, the containers shall be separated by at least 20 feet.

(iii) Containers shall be removed from the building when the training class has terminated.

(6) Container valves and accessories.

(a) Valves in the assembly of multiple container systems shall be arranged so that replacement of containers can be made without shutting off the flow of gas in the system.

Note: This provision is not to be construed as requiring an automatic changeover device

(b) Regulators and low-pressure relief devices shall be rigidly attached to the cylinder valves, cylinders, supporting standards, the building walls or otherwise rigidly secured and shall be so installed or protected that the elements (sleet, snow, or ice) will not affect their operation.

(c) Valves and connections to the containers shall be protected while in transit, in storage, and while being moved into final utilization, as follows:

(i) By setting into the recess of the container to prevent the possibility of their being struck if the container is dropped upon a flat surface, or

(ii) By ventilated cap or collar, fastened to the container capable of withstanding a blow from any direction equivalent to that of a 30-pound weight dropped 4 feet. Construction must be such that a blow will not be transmitted to the valve or other connection.

(d) When containers are not connected to the system, the outlet valves shall be kept tightly closed or plugged, even though containers are considered empty.

(e) Containers having a water capacity in excess of 50 pounds (approximately 21 pounds LP-gas capacity), recharged at the installation, shall be provided with excess flow or backflow check valves to prevent the discharge of container contents in case of failure of the filling or equalizing connection.

(7) Safety devices. (a) Containers shall be provided with safety devices as required by DOT regulations.

(b) A final stage regulator of an LP-gas system (excluding any appliance regulator) shall be equipped on the low-pressure side with a relief valve which is set to start to discharge within the limits specified in Table H-30.

TABLE H-30

Regulator delivery pressure	Relief valve start to discharge pressure setting (percent of regulator deliver pressure)	
	Minimum	Maximum
1 p.s.i.g. or less	200	300
Above 1 p.s.i.g. but not over 3 p.s.i.g.	140	200
Above 3 p.s.i.g.	125	200

(c) When a regulator or pressure relief valve is used inside a building for other than purposes specified in WAC 296-24-47505 (6)(a)(i) through (vi), the relief valve and the space above the regulator and relief valve diaphragms shall be vented to the outside air with the discharge outlet located not less than 3 feet horizontally away from any building opening which is below such discharge. These provisions do not apply to individual appliance regulators when protection is otherwise provided nor to (5) of this section and WAC 296-24-47505 (10)(m). In buildings devoted exclusively to gas distribution purposes, the space above the diaphragm need not be vented to the outside.

(8) Reinstallation of containers. Containers shall not be reinstalled unless they are requalified in accordance with DOT regulations.

(a) Permissible product. A product shall not be placed in a container marked with a service pressure less than four-fifths of the maximum vapor pressure of product at 130°F.

[Order 73-5, § 296-24-47507, filed 5/9/73 and Order 73-4, § 296-24-47507, filed 5/7/73.]

WAC 296-24-47509 Systems utilizing containers other than DOT containers. (1) Application. This section applies specifically to systems utilizing storage containers other than those constructed in accordance with DOT specifications. Wac 296-24-47505 of this section applies to this section unless otherwise noted in WAC 296-24-47505.

(2) Design pressure and classification of storage containers. Storage containers shall be designed and classified in accordance with Table H-31.

(3) Container valves and accessories, filler pipes, and discharge pipes.

(a) The filling pipe inlet terminal shall not be located inside a building. For containers with a water capacity of 125 gallons or more, such terminals shall be located not less than 10 feet from any building (see WAC 296-24-47505 (6)(b)), and preferably not less than 5 feet from any driveway, and shall be located in a protective housing built for the purpose.

TABLE H-31

Container type	For gases with vapor press. Not to exceed lb. per sq. in. gage at 100°F (37.8°C.)	Minimum design pressures of container lb. per sq. in. gage	
		1949 and earlier editions of ASME Code (Par. U-68 U-69)	1949 edition of Code (Par. U-200, U-201); 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API-ASME Code[3]
80[1]	80[1]	80[1]	100[1]
100	100	100	125
125	125	125	156
150	150	150	187
175	175	175	219
200[2]	215	200	250

[1]New storage containers of the 80 type have not been authorized since Dec. 31, 1947.

[2]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designations when constructed under 1949 or earlier editions of the ASME Code (Par. U-68 and U-69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U-200 and U-201), (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API-ASME Code.

[3]Construction of containers under the API-ASME Code is not authorized after July 1, 1961.

(b) The filling connection shall be fitted with one of the following:

(i) Combination back-pressure check valve and excess flow valve.

(ii) One double or two single back-pressure check valves.

(iii) A positive shutoff valve in conjunction with either:

(A) An internal back pressure valve, or

(B) An internal excess flow valve.

(c) All openings in a container shall be equipped with approved automatic excess flow valves except in the following: Filling connections as provided in (3)(b) of this section; safety relief connections, liquid-level gaging devices as provided in WAC 296-24-47505 (7)(d), (19)(c) and (19)(h); pressure gage connections as provided in WAC 296-24-47505 (7)(e), as provided in (3)(d), (f) and (g) of this section.

(d) An excess flow valve is not required in the withdrawal service line providing the following are complied with:

(i) Such systems' total water capacity does not exceed 2,000 U.S. gallons.

(ii) The discharge from the service outlet is controlled by a suitable manually operated shutoff valve which is:

(A) Threaded directly into the service outlet of the container; or

(B) Is an integral part of a substantial fitting threaded into or on the service outlet of the container; or

(C) Threaded directly into a substantial fitting threaded into or on the service outlet of the container.

(iii) The shutoff valve is equipped with an attached handwheel or the equivalent.

(iv) The controlling orifice between the contents of the container and the outlet of the shutoff valve does not exceed five-sixteenths inch in diameter for vapor withdrawal systems and one-eighth inch in diameter for liquid withdrawal systems.

(v) An approved pressure-reducing regulator is directly attached to the outlet of the shutoff valve and is rigidly supported, or that an approved pressure-reducing regulator is attached to the outlet of the shutoff valve by means of a suitable flexible connection, provided the regulator is adequately supported and properly protected on or at the tank.

(e) All inlet and outlet connections except safety relief valves, liquid level gaging devices and pressure gages on containers of 2,000 gallons water capacity, or more, and on any container used to supply fuel directly to an internal combustion engine, shall be labeled to designate whether they communicate with vapor or liquid space. Labels may be on valves.

(f) In lieu of an excess flow valve openings may be fitted with a quick-closing internal valve which, except during operating periods shall remain closed. The internal mechanism for such valves may be provided with a secondary control which shall be equipped with a fusible plug (not over 220°F melting point) which will cause the internal valve to close automatically in case of fire.

(g) Not more than two plugged openings shall be permitted on a container of 2,000 gallons or less water capacity.

(h) Containers of 125 gallons water capacity or more manufactured after July 1, 1961, shall be provided with an approved device for liquid evacuation, the size of which shall be three-fourths inch national pipe thread minimum. A plugged opening will not satisfy this requirements.

(4) Safety devices.

(a) All safety devices shall comply with the following:

(i) All container safety relief devices shall be located on the containers and shall have direct communication with the vapor space of the container.

(ii) In industrial and gas manufacturing plants, discharge pipe from safety relief valves on pipe lines within a building shall discharge vertically upward and shall be piped to a point outside a building.

(iii) Safety relief device discharge terminals shall be so located as to provide protection against physical damage and such discharge pipes shall be fitted with loose raincaps. Return bends and restrictive pipefittings shall not be permitted.

(iv) If desired, discharge lines from two or more safety relief devices located on the same unit, or similar lines from two or more different units, may be run into a common discharge header, provided that the cross-sectional area of such header be at least equal to the sum of the cross-sectional area of the individual discharge lines, and that the setting of safety relief valves are the same.

(v) Each storage container of over 2,000 gallons water capacity shall be provided with a suitable pressure gage.

(vi) A final stage regulator of an LP–gas system (excluding any appliance regulator) shall be equipped on the low–pressure side with a relief valve which is set to start to discharge within the limits specified in Table H–30.

(vii) When a regulator or pressure relief valve is installed inside a building, the relief valve and the space above the regulator and relief valve diaphragms shall be vented to the outside air with the discharge outlet located not less than 3 feet horizontally away from any opening into the building which is below such discharge. (These provisions do not apply to individual appliance regulators when protection is otherwise provided. In buildings devoted exclusively to gas distribution purposes, the space above the diaphragm need not be vented to the outside.)

(b) Safety devices for aboveground containers shall be provided as follows:

(i) Containers of 1,200 gallons water capacity or less which may contain liquid fuel when installed above ground shall have the rate of discharge required by WAC 296–24–47505 (10)(b) provided by a spring–loaded relief valve or valves. In addition to the required spring–loaded relief valve(s) suitable fuse plug(s) may be used provided the total discharge area of the fuse plug(s) for each container does not exceed 0.25 square inch.

(ii) The fusible metal of the fuse plugs shall have a yield temperature of 208°F minimum and 220°F maximum. Relief valves and fuse plugs shall have direct communication with the vapor space of the container.

(iii) On a container having a water capacity greater than 125 gallons, but not over 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose–fitting rain caps shall be used. Suitable provision shall be made for draining condensate which may accumulate in the relief valve or its discharge pipe.

(iv) On containers of 125 gallons water capacity or less, the discharge from safety relief devices shall be located not less than 5 feet horizontally away from any opening into the building below the level of such discharge.

(v) On a container having a water capacity greater than 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards to a point at least 7 feet above the container, and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose–fitting rain caps shall be used. Suitable provision shall be made so that any liquid or condensate that may accumulate inside of the safety relief valve or its discharge pipe will not render the valve inoperative. If a drain is used, a means shall be provided to protect the container, adjacent containers, piping, or equipment against impingement of flame resulting from ignition of product escaping from the drain.

(c) On all containers which are installed underground and which contain no liquid fuel until buried and covered, the rate of discharge of the spring–loaded relief valve installed thereon may be reduced to a minimum of 30 percent of the rate of discharge specified in WAC 296–24–47505 (10)(b). Containers so protected shall not be uncovered after installation until the liquid fuel has been removed therefrom. Containers which may contain liquid fuel before being installed under ground and before being completely covered with earth are to be considered aboveground containers when determining the rate of discharge requirement of the relief valves.

(d) On underground containers of more than 2,000 gallons water capacity, the discharge from safety relief devices shall be piped vertically and directly upward to a point at least 7 feet above the ground.

Where there is a probability of the manhole or housing becoming flooded, the discharge from regulator vent lines shall be above the highest probable water level. All manholes or housings shall be provided with ventilated louvers or their equivalent, the area of such openings equaling or exceeding the combined discharge areas of the safety relief valves and other vent lines which discharge their content into the manhole housing.

(e) Safety devices for vaporizers shall be provided as follows:

(i) Vaporizers of less than 1 quart total capacity, heated by the ground or the surrounding air, need not be equipped with safety relief valves provided that adequate tests certified by any of the authorities referred to in WAC 296–24–47505(2), demonstrate that the assembly is safe without safety relief valves.

(ii) No vaporizer shall be equipped with fusible plugs.

(iii) In industrial and gas manufacturing plants, safety relief valves on vaporizers within a building shall be piped to a point outside the building and be discharged upward.

(5) Reinstallation of containers. Containers may be reinstalled if they do not show any evidence of harmful external corrosion or other damage. Where containers are reinstalled underground, the corrosion resistant coating shall be put in good condition (see (7)(f) of this section). Where containers are reinstalled above ground, the safety devices and gaging devices shall comply with (4) of this section and WAC 296–24–47505(19) respectively for aboveground containers.

(6) Capacity of containers. A storage container shall not exceed 90,000 gallons water capacity.

(7) Installation of storage containers.

(a) Containers installed above ground, except as provided in (7)(g) of this section, shall be provided with substantial masonry or noncombustible structural supports on firm masonry foundation.

(b) Aboveground containers shall be supported as follows:

(i) Horizontal containers shall be mounted on saddles in such a manner as to permit expansion and contraction. Structural metal supports may be employed when they are protected against fire in an approved manner. Suitable means of preventing corrosion shall be provided

on that portion of the container in contact with the foundations or saddles.

(ii) Containers of 2,000 gallons water capacity or less may be installed with nonfireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container shell to the concrete pad, footing, or the ground does not exceed 24 inches.

(c) Any container may be installed with nonfireproofed ferrous metal supports if mounted on concrete pads or footings, and if the distance from the outside bottom of the container to the ground does not exceed 5 feet, provided the container is in an isolated location.

(d) Containers may be partially buried providing the following requirements are met:

(i) The portion of the container below the surface and for a vertical distance not less than 3 inches above the surface of the ground is protected to resist corrosion, and the container is protected against settling and corrosion as required for fully buried containers.

(ii) Spacing requirements shall be as specified for underground tanks in WAC 296-24-47505 (6)(b).

(iii) Relief valve capacity shall be as required for aboveground containers.

(iv) Container is located so as not to be subject to vehicular damage, or is adequately protected against such damage.

(v) Filling densities shall be as required for aboveground containers as specified in Table H-27. See WAC 296-24-47505.

(e) Containers buried underground shall be placed so that the top of the container is not less than 6 inches below grade. Where an underground container might be subject to abrasive action or physical damage due to vehicular traffic or other causes, then it shall be:

(i) Placed not less than 2 feet below grade, or

(ii) Otherwise protected against such physical damage.

It will not be necessary to cover the portion of the container to which manhole and other connections are affixed; however, where necessary, protection shall be provided against vehicular damage. When necessary to prevent floating, containers shall be securely anchored or weighted.

(f) Containers shall be given a protective coating before being placed underground. This coating shall be equivalent to hot-dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, care shall be exercised to prevent damage to the coating. Any damage to the coating shall be repaired before backfilling.

(i) Containers shall be set on a firm foundation (firm earth may be used) and surrounded with earth or sand firmly tamped in place. Backfill should be free of rocks or other abrasive materials.

(g) Containers with foundations attached (portable or semiportable containers with suitable steel "runners" or "skids" and popularly known in the industry as "skid tanks") shall be designed, installed, and used in accordance with these rules subject to the following provisions:

(i) If they are to be used at a given general location for a temporary period not to exceed 6 months they need not have fire-resisting foundations or saddles but shall have adequate ferrous metal supports.

(ii) They shall not be located with the outside bottom of the container shell more than 5 feet above the surface of the ground unless fire-resisting supports are provided.

(iii) The bottom of the skids shall not be less than 2 inches or more than 12 inches below the outside bottom of the container shell.

(iv) Flanges, nozzles, valves, fittings, and the like, having communication with the interior of the container, shall be protected against physical damage.

(v) When not permanently located on fire-resisting foundations, piping connections shall be sufficiently flexible to minimize the possibility of breakage or leakage of connections if the container settles, moves, or is otherwise displaced.

(vi) Skids, or lugs for attachment of skids, shall be secured to the container in accordance with the code or rules under which the container is designed and built (with a minimum factor of safety of four) to withstand loading in any direction equal to four times the weight of the container and attachments when filled to the maximum permissible loaded weight.

(h) Field welding where necessary shall be made only on saddle plates or brackets which were applied by the manufacturer of the tank.

(i) For aboveground containers, secure anchorage or adequate pier height shall be provided against possible container flotation wherever sufficiently high floodwater might occur.

(j) When permanently installed containers are interconnected, provision shall be made to compensate for expansion, contraction, vibration, and settling of containers, and interconnecting piping. Where flexible connections are used, they shall be of an approved type and shall be designed for a bursting pressure of not less than five times the vapor pressure of the product at 100°F. The use of nonmetallic hose is prohibited for permanently interconnecting such containers.

(k) Container assemblies listed for interchangeable installation above ground or under ground shall conform to the requirements for aboveground installations with respect to safety relief capacity and filling density. For installation above ground all other requirements for aboveground installations shall apply. For installation under ground all other requirements for underground installations shall apply.

(8) Protection of container accessories.

(a) Valves, regulating, gaging, and other container accessory equipment shall be protected against tampering and physical damage. Such accessories shall also be so protected during the transit of containers intended for installation underground.

(b) On underground or combination aboveground-underground containers, the service valve handwheel, the terminal for connecting the hose, and the opening through which there can be a flow from safety relief valves shall be at least 4 inches above the container and this opening shall be located in the dome or housing.

Underground systems shall be so installed that all the above openings, including the regulator vent, are located above the normal maximum water table.

(c) All connections to the underground containers shall be located within a substantial dome, housing, or manhole and with access thereto protected by a substantial cover.

(9) Drips for condensed gas. Where vaporized gas on the low-pressure side of the system may condense to a liquid at normal operating temperatures and pressures, suitable means shall be provided for revaporization of the condensate.

(10) Damage from vehicles. When damage to LP-gas systems from vehicular traffic is a possibility, precautions against such damage shall be taken.

(11) Pits and drains. Every effort should be made to avoid the use of pits, except pits fitted with automatic flammable vapor detecting devices. No drains or blowoff lines shall be directed into or in proximity to sewer systems used for other purposes.

(12) General provisions applicable to systems in industrial plants (of 2,000 gallons water capacity and more) and to bulk filling plants.

(a) When standard watch service is provided, it shall be extended to the LP-gas installation and personnel properly trained.

(b) If loading and unloading are normally done during other than daylight hours, adequate lights shall be provided to illuminate storage containers, control valves, and other equipment.

(c) Suitable roadways or means of access for extinguishing equipment such as wheeled extinguishers or fire department apparatus shall be provided.

(d) To minimize trespassing or tampering, the area which includes container appurtenances, pumping equipment, loading and unloading facilities, and cylinder-filling facilities shall be enclosed with at least a 6-foot-high industrial type fence unless otherwise adequately protected. There shall be at least two means of emergency access.

(13) Container-charging plants.

(a) The container-charging room shall be located not less than:

(i) Ten feet from bulk storage containers.

(ii) Twenty-five feet from line of adjoining property which may be built upon.

(b) Tank truck filling station outlets shall be located not less than:

(i) Twenty-five feet from line of adjoining property which may be built upon.

(ii) Ten feet from pumps and compressors if housed in one or more separate buildings.

(c) The pumps or compressors may be located in the container-charging room or building, in a separate building, or outside of buildings. When housed in separate building, such building (a small noncombustible weather cover is not to be construed as a building) shall be located not less than:

(i) Ten feet from bulk storage tanks.

(ii) Twenty-five feet from line of adjoining property which may be built upon.

(iii) Twenty-five feet from sources of ignition.

(d) When a part of the container-charging building is to be used for a boiler room or where open flames or similar sources of ignition exist or are employed, the space to be so occupied shall be separated from container charging room by a partition wall or walls of fire-resistant construction continuous from floor to roof or ceiling. Such separation walls shall be without openings and shall be joined to the floor, other walls, and ceiling or roof in a manner to effect a permanent gas-tight joint.

(e) Electrical equipment and installations shall conform with WAC 296-24-47505 (17) and (18).

(14) Fire protection.

(a) Each bulk plant shall be provided with at least one approved portable fire extinguisher having a minimum rating of 12-B, C.

(b) In industrial installations involving containers of 150,000 gallons aggregate water capacity or more, provision shall be made for an adequate supply of water at the container site for fire protection in the container area, unless other adequate means for fire control are provided. Water hydrants shall be readily accessible and so spaced as to provide water protection for all containers. Sufficient lengths of firehose shall be provided at each hydrant location on a hose cart, or other means provided to facilitate easy movement of the hose in the container area. It is desirable to equip the outlet of each hose line with a combination fog nozzle. A shelter shall be provided to protect the hose and its conveyor from the weather.

(15) Painting. Aboveground containers shall be kept properly painted.

(16) Lighting. Electrical equipment and installations shall conform to WAC 296-24-47505 (17) and (18).

(17) Vaporizers for internal combustion engines. The provisions of WAC 296-24-47511(8) shall apply.

(18) Gas regulating and mixing equipment for internal combustion engines. The provisions of WAC 296-24-47511(9) shall apply.

[Order 73-5, § 296-24-47509, filed 5/9/73 and Order 73-4, § 296-24-47509, filed 5/7/73.]

WAC 296-24-47511 Liquefied petroleum gas as a motor fuel. (1) Application.

(a) This section applies to internal combustion engines, fuel containers, and pertinent equipment for the use of liquefied petroleum gases as a motor fuel on easily movable, readily portable units including self-propelled vehicles.

(b) Fuel containers and pertinent equipment for internal combustion engines using liquefied petroleum gas where installation is of the stationary type are covered by WAC 296-24-47509. This section does not apply to containers for transportation of liquefied petroleum gases nor to marine fuel use. All requirements of WAC 296-24-47505 apply to this section, unless otherwise noted in WAC 296-24-47505.

(2) General.

(a) Fuel may be used from the cargo tank of a truck while in transit, but not from cargo tanks on trailers or

semitrailers. The use of fuel from the cargo tanks to operate stationary engines is permitted providing wheels are securely blocked.

(b) Passenger–carrying vehicles shall not be fueled while passengers are on board.

(c) Industrial trucks (including lift trucks) equipped with permanently mounted fuel containers shall be charged outdoors. Charging equipment shall comply with the provisions of WAC 296–24–47517.

(d) LP–gas fueled industrial trucks shall comply with the Standard for Type Designations, Areas of Use, Maintenance and Operation of Powered Industrial Trucks, NFPA 505–1969.

(e) Engines on vehicles shall be shut down while fueling if the fueling operation involves venting to the atmosphere.

(3) Design pressure and classification of fuel containers.

(a) Except as covered in (3)(b) and (c) of this section, containers shall be in accordance with Table H–32.

(b) Fuel containers for use in industrial trucks (including lift trucks) shall be either DOT containers authorized for LP–gas service having a minimum service pressure of 240 p.s.i.g or minimum Container Type 250. Under 1950 and later ASME Codes, this means a 312.5–p.s.i.g design pressure container.

TABLE H–32

Container type	For gases with vapor press. Not to exceed lb. per sq. in. gage at 100°F. (37.8°C.)	Minimum design pressure of container lb. per sq. in. gage	
		1949 and earlier editions of ASME Code (Par. U–68, U–69)	1949 edition of ASME Code (Par. U–200, U–201); 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API–ASME Code[2]
200[1]	215	200	250

[1]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designation when constructed under 1949 or earlier editions of the ASME Code (Par. U–68 and U–69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U–200 and U–201) (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API–ASME Code.

[2]Construction of containers under the API–ASME Code is not authorized after July 1, 1961.

(c) Containers manufactured and maintained under DOT specifications and regulations may be used as fuel containers. When so used they shall conform to all requirements of this section.

(d) All container inlets and outlets except safety relief valves and gaging devices shall be labeled to designate whether they communicate with vapor or liquid space. (Labels may be on valves.)

(4) Installation of fuel containers.

(a) Containers shall be located in a place and in a manner to minimize the possibility of damage to the container. Containers located in the rear of trucks and buses, when protected by substantial bumpers, will be considered in conformance with this requirement. Fuel containers on passenger–carrying vehicles shall be installed as far from the engine as is practicable, and the passenger space and any space containing radio equipment shall be sealed from the container space to prevent direct seepage of gas to these spaces. The container compartment shall be vented to the outside. In case the fuel container is mounted near the engine or the exhaust system, the container shall be shielded against direct heat radiation.

(b) Containers shall be installed with as much clearance as practicable but never less than the minimum road clearance of the vehicle under maximum spring deflection. This minimum clearance shall be to the bottom of the container or to the lowest fitting on the container or housing, whichever is lower.

(c) Permanent and removable fuel containers shall be securely mounted to prevent jarring loose, slipping, or rotating, and the fastenings shall be designed and constructed to withstand static loading in any direction equal to twice the weight of the tank and attachments when filled with fuel using a safety factor of not less than four based on the ultimate strength of the material to be used. Field welding, when necessary, shall be made only on saddle plates, lugs or brackets, originally attached to the container by the tank manufacturer.

(d) Fuel containers on buses shall be permanently installed.

(e) Containers from which vapor only is to be withdrawn shall be installed and equipped with suitable connections to minimize the accidental withdrawal of liquid.

(5) Valves and accessories.

(a) Container valves and accessories shall have a rated working pressure of at least 250 p.s.i.g., and shall be of a type suitable for liquefied petroleum gas service.

(b) The filling connection shall be fitted with an approved double back–pressure check valve, or a positive shutoff in conjunction with an internal back–pressure check valve. On a removable container the filler valve may be a hand operated shutoff valve with an internal excess flow valve. Main shutoff valves on the container on liquid and vapor must be readily accessible.

(c) With the exceptions of (5)(d)(iii) of this section, filling connections equipped with approved automatic back–pressure check valves, and safety relief valves, all connections to the containers having openings for the flow of gas in excess of a No. 54 drill size shall be equipped with approved automatic excess flow valves to prevent discharge of content in case connections are broken.

(d) Liquid–level gaging devices:

(i) Variable liquid–level gages which require the venting of fuel to the atmosphere shall not be used on fuel containers of industrial trucks (including lift trucks).

(ii) On portable containers that may be filled in the vertical and/or horizontal position, the fixed liquid–level gage shall indicate maximum permitted filling level for

both vertical and horizontal filling with the container oriented to place the safety relief valve in communication with the vapor space.

(iii) In the case of containers used solely in farm tractor service and charged at a point at least 50 feet from any important building, the fixed liquid-level gaging device may be so constructed that the outward flow of container content exceeds that passed by a No. 54 drill size opening, but in no case shall the flow exceed that passed by a No. 31 drill-size opening. An excess flow valve is not required. Fittings equipped with such restricted drill size opening and container on which they are used shall be marked to indicate the size of the opening.

(iv) All valves and connections on containers shall be adequately protected to prevent damage due to accidental contact with stationary objects or from loose objects thrown up from the road, and all valves shall be safeguarded against damage due to collision, overturning or other accident. For farm tractors where parts of the vehicle provide such protection to valves and fittings, the foregoing requirements shall be considered fulfilled. However, on removable type containers the protection for the fittings shall be permanently attached to the container.

(v) (Exchange of removable fuel containers preferable should be done outdoors but may be done indoors.) When removable fuel containers are used, means shall be provided in the fuel system to minimize the escape of fuel when the containers are exchanged. This shall be accomplished by one of the following methods:

(A) Using an approved automatic quick-closing coupling (a type closing in both directions when uncoupled) in the fuel line, or

(B) Closing the valve at the fuel container and allowing the engine to run until the fuel in the line is consumed.

(6) Piping—Including pipe, tubing, and fittings.

(a) Pipe from fuel container to first-stage regulator shall be not less than schedule 80 wrought iron or steel (black or galvanized), brass or copper; or seamless copper, brass, or steel tubing. Steel tubing shall have a minimum wall thickness of 0.049 inch. Steel pipe or tubing shall be adequately protected against exterior corrosion. Copper tubing shall be types K or L or equivalent having a minimum wall thickness of 0.032 inch. Approved flexible connections may be used between container and regulator or between regulator and gas-air mixer within the limits of approval. The use of aluminum pipe or tubing is prohibited. In the case of removable containers an approved flexible connection shall be used between the container and the fuel line.

(b) All piping shall be installed, braced, and supported so as to reduce to a minimum the possibility of vibration strains or wear.

(7) Safety devices.

(a) Spring-loaded internal type safety relief valves shall be used on all motor fuel containers.

(b) The discharge outlet from safety relief valves shall be located on the outside of enclosed spaces and as far as practicable from possible sources of ignition, and vented upward within 45 degrees of the vertical in such a manner as to prevent impingement of escaping gas upon containers, or parts of vehicles, or on vehicles in adjacent lines of traffic. A rain cap or other protector shall be used to keep water and dirt from collecting in the valve.

(c) When a discharge line from the container safety relief valve is used, the line shall be metallic, other than aluminum, and shall be sized, located, and maintained so as not to restrict the required flow of gas from the safety relief valve. Such discharge line shall be able to withstand the pressure resulting from the discharge of vapor when the safety relief valve is in the full open position. When flexibility is necessary, flexible metal hose or tubing shall be used.

(d) Portable containers equipped for volumetric filling may be filled in either the vertical or horizontal position only when oriented to place the safety relief valve in communication with the vapor space.

(e) WAC 296-24-47505 (10)(1) for hydrostatic relief valves shall apply.

(8) Vaporizers.

(a) Vaporizers and any part thereof and other devices that may be subjected to container pressure shall have a design pressure of at least 250 p.s.i.g.

(b) Each vaporizer shall have a valve or suitable plug which will permit substantially complete draining of the vaporizer. It shall be located at or near the lowest portion of the section occupied by the water or other heating medium.

(c) Vaporizers shall be securely fastened so as to minimize the possibility of becoming loosened.

(d) Each vaporizer shall be permanently marked at a visible point as follows:

(i) With the design pressure of the fuel-containing portion in p.s.i.g.

(ii) With the water capacity of the fuel-containing portion of the vaporizer in pounds.

(e) Devices to supply heat directly to a fuel container shall be equipped with an automatic device to cut off the supply of heat before the pressure inside the fuel container reaches 80 percent of the start to discharge pressure setting of the safety relief device on the fuel container.

(f) Engine exhaust gases may be used as a direct source of heat supply for the vaporization of fuel if the materials of construction of those parts of the vaporizer in contact with exhaust gases are resistant to the corrosive action of exhaust gases and the vaporizer system is designed to prevent excessive pressures.

(g) Vaporizers shall not be equipped with fusible plugs.

(9) Gas regulating and mixing equipment.

(a) Approved automatic pressure reducing equipment shall be installed in a secure manner between the fuel supply container and gas-air mixer for the purpose of reducing the pressure of the fuel delivered to the gas-air mixer.

(b) An approved automatic shutoff valve shall be provided in the fuel system at some point ahead of the inlet of the gas-air mixer, designed to prevent flow of fuel to the mixer when the ignition is off and the engine is not

running. In the case of industrial trucks and engines operating in buildings other than those used exclusively to house engines, the automatic shutoff valve shall be designed to operate if the engine should stop. Atmospheric type regulators (zero governors) shall be considered adequate as an automatic shutoff valve only in cases of outdoor operation such as farm tractors, construction equipment, irrigation pump engines, and other outdoor stationary engine installations.

(c) The source of the air for combustion shall be completely isolated from the passenger compartment, ventilating system, or air-conditioning system.

(10) Capacity of containers. No single fuel container used on passenger carrying vehicles shall exceed 200 gallons water capacity. No single fuel container on other vehicles normally operating on the highway shall exceed 300 gallons water capacity except as provided in (2)(a) of this section.

(11) Stationary engines in buildings. Stationary engines and gas turbines installed in buildings, including portable engines used instead of or to supplement stationary engines, shall comply with the Standard for the Institution and Use of Stationary Combustion Engines and Gas Turbines, NFPA 37-1970, and the appropriate provisions of WAC 296-24-47505 through 296-24-47509.

(12) Portable engines in buildings.

(a) Portable engines may be used in buildings only for emergency use, except as provided by (11) of this section.

(b) Exhaust gases shall be discharged to outside the building or to an area where they will not constitute a hazard.

(c) Provision shall be made to supply sufficient air for combustion and cooling.

(d) An approved automatic shutoff valve shall be provided in the fuel system ahead of the engine, designed to prevent flow of fuel to the engine when the ignition is off or if the engine should stop.

(e) The capacity of LP-gas containers used with such engines shall comply with the applicable occupancy provision of WAC 296-24-47507(5).

(13) Industrial trucks inside buildings.

(a) LP-gas-fueled industrial trucks are permitted to be used in buildings and structures.

(b) No more than two LP-gas containers shall be used on an industrial truck for motor fuel purposes.

(c) LP-gas-fueled industrial trucks are permitted to be used in buildings frequented by the public, when occupied by the public. The total water capacity of containers on each industrial truck shall not exceed 105 pounds (nominal 45 pounds LP-gas).

(d) Trucks shall not be left unattended in areas occupied by the public.

(e) Industrial trucks shall not be parked and left unattended in areas of possible excessive heat or sources of ignition.

(14) Garaging LP-gas-fueled vehicles.

(a) LP-gas-fueled vehicles may be stored or serviced inside garages provided there are no leaks in the fuel system and the fuel tanks are not filled beyond the maximum filling capacity specified in WAC 296-24-47505 (12)(a).

(b) LP-gas-fueled vehicles being repaired in garages shall have the container shutoff valve closed except when fuel is required for engine operation.

(c) Such vehicles shall not be parked near sources of heat, open flames, or similar sources of ignition or near open pits unless such pits are adequately ventilated.

[Order 73-5, § 296-24-47511, filed 5/9/73 and Order 73-4, § 296-24-47511, filed 5/7/73.]

WAC 296-24-47513 Storage of containers awaiting use or resale. (1) Application. This paragraph shall apply to the storage of portable containers not in excess of 1,000 pounds water capacity, filled or partially filled, at user location but not connected for use, or in storage for resale by dealers or resellers. This section shall not apply to containers stored at charging plants or at plants devoted primarily to the storage and distribution of LP-gas or other petroleum products.

(2) General.

(a) Containers in storage shall be located so as to minimize exposure to excessive temperature rise, physical damage, or tampering by unauthorized persons.

(b) Containers when stored inside shall not be located near exits, stairways, or in areas normally used or intended for the safe exit of people.

(c) Container valves shall be protected while in storage as follows:

(i) By setting into recess of container to prevent the possibility of their being struck if the container is dropped upon a flat surface, or

(ii) By ventilated cap or collar, fastened to container capable of withstanding blow from any direction equivalent to that of a 30-pound weight dropped 4 feet. Construction must be such that a blow will not be transmitted to a valve or other connection.

(d) The outlet valves of containers in storage shall be closed.

(e) Empty containers which have been in LP-gas service should preferably be stored in the open. When stored inside, they shall be considered as full containers for the purpose of determining the maximum quantity of LP-gas permitted by this section.

(3) Storage within buildings frequented by the public.

(a) DOT specification containers having a maximum individual water capacity of 2 1/2 pounds, used with completely self-contained hand torches and similar applications, are permitted to be stored or displayed in a building frequented by the public. The display of such containers shall be limited to a total of 24 units of each brand and size. The total quantity on display and in storage shall not exceed 200 pounds LP-gas.

(b) Storage as provided in (5) of this section shall not be permitted within or attached to such a building.

(4) Storage within buildings not frequented by the public (such as industrial buildings).

(a) The quantity of LP-gas stored shall not exceed 300 pounds (approximately 2,550 cubic feet in vapor form) except as provided in (5) of this section.

(b) Containers carried as a part of service equipment on highway mobile vehicles are not to be considered in the total storage capacity in (4)(a) of this section provided such vehicles are stored in private garages, and are limited to one container per vehicle with an LP-gas capacity of not more than 100 pounds. All container valves shall be closed.

(5) Storage within special buildings or rooms.

(a) The quantity of LP-gas stored in special buildings or rooms shall not exceed 10,000 pounds.

(b) The walls, floors, and ceilings of container storage rooms that are within or adjacent to other parts of the building shall be constructed of material having at least a 2-hour fire resistance rating.

(c) A portion of the exterior walls or roof having an area not less than 10 percent of that of the combined area of the enclosing walls and roof shall be of explosion relieving construction.

(d) Each opening from such storage rooms to other parts of the building shall be protected by a 1 1/2 hour (B) fire door listed by Underwriters Laboratories Inc.

(e) Such rooms shall have no open flames for heating or lighting.

(f) Such rooms shall be adequately ventilated both top and bottom to the outside only. The openings from such vents shall be at least 5 feet away from any other opening into any building.

(g) The floors of such rooms shall not be below ground level. Any space below the floor shall be of solid fill or properly ventilated to the open air.

(h) Such storage rooms shall not be located adjoining the line of property occupied by schools, churches, hospitals, athletic fields or other points of public gathering.

(i) Fixed electrical equipment shall be installed in accordance with WAC 296-24-47505(18).

(6) Storage outside of buildings.

(a) Storage outside of buildings, for containers awaiting use or resale, shall be located in accordance with Table H-33 with respect to; (i) the nearest important building or group of buildings; (ii) the line of adjoining property which may be built upon; (iii) busy thoroughfares; (vi) the line of adjoining property occupied by schools, churches, hospitals, athletic fields, or other points of public gathering.

TABLE H-33

Quantity of LP-Gas Stored:	Distance
500 pounds or less	0
501 to 2,500 pounds	0*
2,501 to 6,000 pounds	10 feet
6,001 to 10,000 pounds	20 feet
Over 10,000 pounds	25 feet

*Container or containers shall be at least 10 feet from any building on adjoining property, any sidewalk, or any of the exposures described in (6)(a)(iii) or (iv) of this section.

(b) Containers shall be in a suitable enclosure or otherwise protected against tampering.

(7) Fire protection. Storage locations other than supply depots separated and located apart from dealer, reseller, or user establishments shall be provided with at least one approved portable fire extinguisher having a minimum rating of 8-B, C.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-47513, filed 11/13/80; Order 76-6, § 296-24-47513, filed 3/1/76; Order 73-5, § 296-24-47513, filed 5/9/73 and Order 73-4, § 296-24-47513, filed 5/7/73.]

WAC 296-24-47515 LP-gas system installations on commercial vehicles. (1) Application. This paragraph applies to LP-gas-system installations on vehicles (whether self-propelled or of the trailer or semitrailer type) used for commercial, construction, or public service purposes such as mobile libraries and clinics; to all exchangeable container systems with container capacities greater than 105 pounds water capacity (approximately 45 pounds LP-gas capacity) and to systems using containers permanently mounted on vehicles. It does not apply to LP-gas motor fuel systems covered by WAC 296-24-47511. WAC 296-24-47505 applies to this section unless otherwise noted. When such a vehicle is permanently parked, and LP-gas is supplied from a system not mounted on and secured to the unit, WAC 296-24-47507 and 296-24-47509 shall apply.

(2) Construction and marking of containers. Containers shall be constructed in accordance with WAC 296-24-47505(3), and marked in accordance with the applicable requirements of WAC 296-24-47505(5), and shall also meet the following:

(a) Containers designed for use as portable cylinders shall be constructed in accordance with DOT specifications, and in accordance with WAC 296-24-47505 (2)(e); where applicable.

(b) All other containers whether designed for permanent mounting, or for portable or semiportable use (such as skid tanks), shall be constructed as provided for by WAC 296-24-47505 (2)(d) and (3)(a). Mounting, securing, and protection of such containers shall be as in (2)(c) and (d) of this section.

(c) Permanently installed containers shall meet the requirements of (2)(c)(i) and (ii) of this section with regard to container valves and accessories, and (2)(c)(iii) through (vi) of this section as to mounting.

(i) Nonrecessed container fittings and appurtenances shall be protected against damage by either:

(A) Their location.

(B) The vehicle frame or bumper, or

(C) protective housing. The protective housing, if used, shall comply with the requirements under which the tanks are fabricated with respect to design and construction and shall be designed to withstand static loadings in any direction equal to twice the weight of the tank and attachments when filled with the lading using a safety factor of not less than four, based on the ultimate strength of the material to be used. The housing shall be provided with a weather cover if necessary to insure proper operation of valves and safety devices.

(ii) Manually operated shutoff valves, except as covered in WAC 296-24-47511 (2)(a), or self-closing internal valves shall be closed except during transfer operations.

(iii) Tank motor vehicles with frames not made integral with the tank, as by welding, shall be provided with turnbuckles or similar positive devices for drawing the tank down tight on the frame. In addition, suitable stops or anchors shall be attached to the frame and/or the tank to prevent relative motion between them due to starting, stopping, and turning. The stops and anchors shall be so installed as to be readily accessible for inspection and maintenance.

(iv) Any tank motor vehicle designed and constructed so that the cargo tank constitutes in whole or in part the stress member used in lieu of a frame shall be supported by external cradles subtending at least 120 degrees of the shell circumference. The design calculations shall include beam stress, shear stress, torsion stress, bending moment, and acceleration stress for the cargo tank as a whole using a factor of safety of four, based on the ultimate tensile strength of the material. Maximum concentrated stresses which might be created at pads and cradles due to shear, bending, and torsion shall also be calculated in accordance with Appendix G of the American Society of Mechanical Engineers, Unfired Pressure Vessel Code, 1968. Fully loaded vehicles shall be assumed to be operating under highway conditions equal to two "g" loading. The effects of fatigue shall be taken into consideration. Cargo tanks mounted on frames may be supported by longitudinal members attached to pads providing the above-stated factors are taken into account.

(v) Where any tank support is attached to any part of a tank head, the stresses imposed upon the head shall be provided for as required in (2)(c)(iv) of this section.

(vi) Tank supports, stops, anchors, and bumpers shall not be welded directly to the tank but shall be attached by means of pads of the same material as the tank. The pad thickness shall be not less than one-fourth inch, or the thickness of the shell material if less, and no greater than the shell material. Each pad shall extend at least four times its thickness, in each direction, beyond the weld attaching the support, bumper, stop, or anchor. Each pad shall be preformed to an inside radius no greater than the outside radius of the tank at the place of attachment. Each pad corner shall be rounded to a radius at least one-fourth the width of the pad, and no greater than one-half the width of the pad. Weepholes and tell-tale holes, if used, shall be drilled or punched before the pads are attached to the tank. Each pad shall be attached to the tank by continuous fillet welding using filler material having properties conforming to the recommendations of the maker of the shell and head material.

(d) Portable or semiportable containers (skid tanks as covered by WAC 296-24-47509 (7)(g)) shall meet the applicable requirements of (2)(d)(i) to (vi) of this section inclusive with regard to container valves and accessories and WAC 296-24-47511 (4)(c) as to mounting. Containers designed for permanent installation as part of systems under WAC 296-24-47509 shall not be used.

(i) Nonrecessed container fittings and appurtenances shall be protected against damage by either—

(A) Their location.

(B) The vehicle frame or bumper, or

(C) A protective housing. The protective housing, if used, shall comply with the requirements under which the tanks are fabricated with respect to design and construction and shall be designed to withstand static loadings in any direction equal to twice the weight of the tank and attachments when filled with the lading using a safety factor of not less than four, based on the ultimate strength of the material to be used. The housing shall be provided with a weather cover if necessary to insure proper operation of valves and safety devices.

(ii) Filling connections shall be provided with approved automatic back pressure check valves, excess flow check valves or quick closing internal valves to prevent excessive escape of gas in case the filling connection is broken, except that where the filling and discharge connect on a common opening in the container shell, and that opening is fitted with a quick-closing internal valve as specified in (2)(d)(iii) of this section, the automatic valve shall not be required. In addition every inlet and outlet connection shall be equipped with a manually or automatically operated shutoff valve. Liquid discharge openings, except those for engine fuel lines, on tanks built after September 1, 1965, shall be fitted with a remotely controlled internal shutoff valve. Such valve shall conform to the following requirements:

(A) The seat of the valve shall be inside the tank, or in the opening nozzle or flange, or in a companion flange bolted to the nozzle or flange.

(B) All parts of the valve inside the tank, nozzle, or companion flange shall be made of material not subject to corrosion or other deterioration in the presence of the lading.

(C) The arrangement of parts shall be such that damage to parts exterior to the tank will not prevent effective seating of the valve.

(D) The valve may be operated normally by mechanical means, by hydraulic means, or by air, or gas pressure.

(E) The valve shall be provided with remote means of automatic closure, both mechanical and thermal, in at least two places for tanks over 3,500 gallons water capacity. These remote control stations shall be located at each end of the tank and diagonally opposite each other. The thermal control mechanism shall have a fusible element with a melting point not over 220°F or less then 208°F. At least one remote control station shall be provided for tanks of 3,500 gallons water capacity or less, and such actuating means may be mechanical.

(iii) All other connections to containers, except those used for gaging devices, thermometer wells, safety relief devices, and plugged openings, shall be provided with suitable automatic excess flow valves, or in lieu thereof may be fitted with quick-closing internal valves.

The control mechanism for the internal valve shall be provided with a secondary control, remote from the fill or discharge connections (for use in the event of accidents or fire during delivery operations), and such control mechanism shall have a fusible element with a melting point not over 220°F or less than 208°F.

(iv) Manually operated shutoff valves, except as covered in WAC 296-24-47511 (2)(a), or self-closing internal valves shall be closed except during transfer operations.

(v) Excess flow valves shall close automatically at the rated flow of vapor or liquid as specified by the valve manufacturers. The flow rating of the piping beyond the excess flow valve shall be greater than that of the excess flow valve and such rating shall include valves, fittings, and hose, except, when branching or necessary restrictions are incorporated in such a piping system so that flow ratings are less than that of the excess flow valve and the tank, then additional excess flow valves shall be installed in the piping where such flow rate is reduced.

(vi) Container inlets and outlets, except those used for safety relief valves, liquid-level gaging devices, and pressure gages, shall be labeled to designate whether they communicate with vapor or liquid space when the container is filled to maximum permitted filling density. (Labels may be on valves.)

(3) Capacity of a system. No single fuel container used on passenger carrying vehicles shall exceed 200 gallons water capacity.

(4) Description of a system. A system consists of an assembly of equipment installed on a commercial vehicle.

(5) Location of containers and systems.

(a) Containers shall not be installed, transported, or stored (even temporarily) inside any vehicle covered by these standards except as provided by the applicable regulations of DOT.

(b) Containers, control valves, and regulating equipment comprising a complete system shall be suitably protected against damage and weather. Systems may be installed in a recess vaportight to the inside of the vehicle and accessible from and vented to the outside.

(c) Systems installed outside of mobile units shall be so located that discharge from safety relief devices shall be not less than 3 feet horizontally away from any opening into the unit below the level of such discharge. When the system is located in a recess vaportight to the inside, vent openings in such recess shall be not less than 3 feet horizontally away from any opening into the mobile unit below the level of these vents.

(d) There shall be no fuel connection between tractor and trailer or other vehicle units.

(e) The container or container carrier shall be secured in place by fastenings designed and constructed with a minimum safety factor of four to withstand loading in any direction equal to twice the weight of the container when filled to normal capacity with LP-gas.

(6) Container valves and accessories. Container valves and accessories shall be provided, protected and mounted as follows:

(a) Systems utilizing DOT cylinders in accordance with WAC 296-24-47507(6).

(b) All other systems in accordance with WAC 296-24-47509 (3)(b) through (g).

(c) Portable, semiportable and permanently mounted containers shall be mounted and protected as provided under (2)(b) through (d) of this section.

(7) Safety-relief devices.

(a) DOT containers shall be provided with safety-relief devices as required by the regulations of DOT.

(b) ASME containers and API-ASME containers shall be provided with safety-relief devices as required by WAC 296-24-47505(10).

(c) A final stage regulator of an LP-gas system (excluding any appliance regulator) shall be equipped on the low-pressure side with a relief valve which is set to start to discharge within the limits specified in Table H-30. (See WAC 296-24-47509.)

(i) The relief valve and space above the regulator and relief valve diaphragms shall be vented to the outside air and terminate at a position to minimize the possibility of vapors accumulating at sources of ignition.

(d) Whenever equipment such as a cargo heater or cooler on commercial vehicles is a type designed to be in operation while in transit, suitable means to stop the flow such as an excess flow valve or other device, shall be installed. This device will be actuated to stop the flow in the event of the break in the fuel supply line. All excess flow valves shall comply with WAC 296-24-47505 (7)(c).

(8) System design and line pressure. Systems may be of either vapor withdrawal or liquid withdrawal type and shall comply with the applicable requirements for the type of usage involved.

(9) System enclosure and mounting.

(a) Housing or enclosures shall be designed to provide proper ventilation.

(b) Hoods, domes, or removable portions of cabinets shall be provided with means to keep them firmly in place during transit.

(c) Provision shall be incorporated in the assembly to hold the containers firmly in position and prevent their movement during transit in accordance with WAC 296-24-47511 (4)(c).

(d) Containers shall be mounted on a substantial support or base secured firmly to the vehicle chassis. Neither the container nor its support shall extend below the frame.

(10) Piping—Including pipe, tubing, and fittings.

(a) Regulators shall be connected directly to the container valve outlet or mounted securely by means of support bracket and connected to the container valve or valves with a listed high pressure flexible connector.

(b) Provision shall be made between the regulator outlet and the gas service lines by either a flexible connector or a tubing loop to provide for expansion, contraction, jarring, and vibration.

(c) Pipe, tubing, and fittings shall conform to WAC 296-24-47505(8) except that the use of aluminum alloy piping is prohibited. Steel tubing shall have a minimum wall thickness of 0.049 inch. Steel piping or tubing shall be adequately protected against exterior corrosion.

(d) Approved gas tubing fittings shall be employed for making tubing connections.

(e) The fuel line shall be firmly fastened in a protected location and where under the vehicle and outside and below any insulation or false bottom, fastenings shall be such as to prevent abrasion or damage to the

gas line due to vibration. Where the fuel line passes through structural members or floors, a rubber grommet or equivalent shall be installed to prevent chafing.

(f) The fuel line shall be installed to enter the vehicle through the floor directly beneath or adjacent to the appliance which it serves. When a branch line is required the tee connection shall be in the main fuel line and located under the floor and outside the vehicle.

(g) All parts of the system assembly shall be so designed and secured as to preclude such parts working loose during transit.

(11) Appliances.

(a) LP–gas appliances shall be approved for use on commercial vehicles.

(b) In the case of vehicles not intended for human occupancy and where the gas–fired heating appliance is used to protect the cargo, such heater may be of the unvented type but provision shall be made to dispose of the products of combustion to the outside.

(c) In the case of vehicles intended for human occupancy, all gas–fired heating appliances, including water heaters, shall be designed or installed to provide for complete separation of the combustion system from the atmosphere of the living space. Such appliances shall be installed with the combustion air inlet assembly furnished as a component of the appliance and, also, with either—

(i) The flue gas outlet assembly furnished as a component of the appliance, or

(ii) A listed roof jack if the appliance is listed for such use.

The combustion air inlet assembly, flue gas outlet assembly, and roof jack shall extend to the outside atmosphere.

(d) Provision shall be made to insure an adequate supply of outside air for combustion.

(e) All gas–fired heating appliances and water heaters shall be equipped with an approved automatic device designed to shut off the flow of gas to the main burner and to the pilot in the event the pilot flame is extinguished.

(f) Gas–fired appliances installed in the cargo space shall be located so they are readily accessible.

(g) Appliances shall be constructed or protected to reduce to a minimum possible damage or impaired operation resulting from cargo shifting or handling.

(h) Appliances inside the vehicle shall be located so that a fire at an appliance will not block egress of persons therefrom.

(12) General precautions.

(a) DOT containers shall be marked, maintained, and requalified for use in accordance with the regulations of DOT.

(b) Containers which have not been requalified as required by DOT regulations shall be removed from service. Requalified containers shall be stamped with the date of requalification. When DOT cylinders are requalified by retesting, such retest shall be made in accordance with DOT regulations.

(c) Containers shall not be charged with fuel unless they bear the proper markings of the code or specifications under which they were constructed, and in addition, with their water capacity. In the case of cylinders or portable containers filled by weight, the container shall be marked with its tareweight.

(d) DOT containers which have been involved in a fire shall not be recharged until they have been requalified for service according to DOT regulations.

(e) American Petroleum Institute–American Society of Mechanical Engineers (API–ASME) containers or ASME containers which have been involved in a fire shall not be recharged until they have been retested in accordance with the requirements for their original hydrostatic test and found to be suitable for continued service.

(f) Containers shall not be charged without the consent of the owner.

(g) A permanent caution plate shall be provided on the appliance or adjacent to the container outside of any enclosure. It shall include the word "caution" and following instructions, or instructions embodying substantially similar language.

(i) Be sure all appliance valves are closed before opening container valve.

(ii) Connections at appliances, regulators, and containers must be checked periodically for leaks with soapy water or its equivalent.

(iii) A match or flame shall not be used to check for leaks.

(iv) Container valves shall be closed when the equipment is not in use.

(13) Charging of containers. Containers shall be charged as provided in WAC 296–24–47505(12).

(14) Fire extinguisher. Mobile cook–units shall be provided with at least one approved portable fire extinguisher having a minimum rating of 8–B, C.

[Order 76–6, § 296–24–47515, filed 3/1/76; Order 73–5, § 296–24–47515, filed 5/9/73 and Order 73–4, § 296–24–47515, filed 5/7/73.]

WAC 296–24–47517 Liquefied petroleum gas service stations. (1) Application. This section applies to storage containers, and dispensing devices, and pertinent equipment in service stations where LP–gas is stored and is dispensed into fuel tanks of motor vehicles. See WAC 296–24–47511 for requirements covering use of LP–gas as a motor fuel. All requirements of WAC 296–24–47505 apply to this section unless otherwise noted.

(2) Design pressure and classification of storage containers. Storage containers shall be designed and classified in accordance with Table H–34.

(3) Container valves and accessories.

(a) A filling connection on the container shall be fitted with one of the following:

(i) A combination back–pressure check and excess flow valve.

(ii) One double or two single back–pressure valves.

(iii) A positive shutoff valve, in conjunction with either:

(A) An internal back–pressure valve, or

(B) An internal excess flow valve.

In lieu of an excess flow valve, filling connections may be fitted with a quick–closing internal valve, which shall remain closed except during operating periods. The mechanism for such valves may be provided with a secondary control which will cause it to close automatically in case of fire. When a fusible plug is used its melting point shall not exceed 220°F.

TABLE H–34

Container type	For gases with vapor press. not to exceed lb. per sq. in. gage at 100°F. (37.8°C.)	Minimum design pressure of container, lb. per sq. in gage	
		1949 and earlier editions of ASME Code (Par. U–68, U–69)	1949 edition of ASME Code (Par. U–200, U–201); 1950, 1952 1956, 1959, 1962, 1965, and 1968 (Division I) editions of ASME Code; All editions of API–ASME Code[2]
200[1]	215	200	250

[1]Container type may be increased by increments of 25. The minimum design pressure of containers shall be 100% of the container type designation when constructed under 1949 or earlier editions of ASME Code (Par. U–68 and U–69). The minimum design pressure of containers shall be 125% of the container type designation when constructed under: (1) The 1949 ASME Code (Par. U–200 and U–201), (2) 1950, 1952, 1956, 1959, 1962, 1965, and 1968 (Division I) editions of the ASME Code, and (3) all editions of the API–ASME Code.

[2]Construction of containers under the API–ASME Code is not authorized after July 1, 1961.

(b) A filling pipe inlet terminal not on the container shall be fitted with a positive shutoff valve in conjunction with either:

(i) A back pressure check valve, or

(ii) An excess flow check valve.

(c) All openings in the container except those listed below shall be equipped with approved excess flow check valves:

(i) Filling connections as provided in (3)(a) of this section.

(ii) Safety relief connections as provided in WAC 296–24–47505 (7)(b).

(iii) Liquid–level gaging devices as provided in WAC 296–24–47505 (7)(d) and (19)(d).

(iv) Pressure gage connections as provided in WAC 296–24–47505 (7)(e).

(d) All container inlets and outlets except those listed below shall be labeled to designate whether they connect with vapor or liquid (labels may be on valves):

(i) Safety relief valves.

(ii) Liquid–level gaging devices.

(iii) Pressure gages.

(e) Each storage container shall be provided with a suitable pressure gage.

(4) Safety–relief valves.

(a) All safety–relief devices shall be installed as follows:

(i) On the container and directly connected with the vapor space.

(ii) Safety–relief valves and discharge piping shall be protected against physical damage. The outlet shall be provided with loose–fitting rain caps. There shall be no return bends or restrictions in the discharge piping.

(iii) The discharge from two or more safety relief valves having the same pressure settings may be run into a common discharge header. The cross–sectional area of such header shall be at least equal to the sum of the individual discharges.

(iv) Discharge from any safety relief device shall not terminate in any building nor beneath any building.

(b) Aboveground containers shall be provided with safety relief valves as follows:

(i) The rate of discharge, which may be provided by one or more valves, shall be not less than that specified in WAC 296–24–47505 (10)(b).

(ii) The discharge from safety relief valves shall be vented to the open air unobstructed and vertically upwards in such a manner as to prevent any impingement of escaping gas upon the container; loose–fitting rain caps shall be used. On a container having a water capacity greater than 2,000 gallons, the discharge from the safety relief valves shall be vented away from the container vertically upwards to a point at least 7 feet above the container. Suitable provisions shall be made so that any liquid or condensate that may accumulate inside of the relief valve or its discharge pipe will not render the valve inoperative. If a drain is used, a means shall be provided to protect the container, adjacent containers, piping, or equipment against impingement of flame resulting from ignition of the product escaping from the drain.

(c) Underground containers shall be provided with safety relief valves as follows:

(i) The discharge from safety–relief valves shall be piped vertically upward to a point at least 10 feet above the ground. The discharge lines or pipes shall be adequately supported and protected against physical damage.

(ii) Where there is a probability of the manhole or housing becoming flooded, the discharge from regulator vent lines should be above the highest probable water level.

(iii) If no liquid is put into a container until after it is buried and covered, the rate of discharge of the relief valves may be reduced to not less than 30 percent of the rate shown in WAC 296–24–47505 (10)(b). If liquid fuel is present during installation of containers, the rate of discharge shall be the same as for aboveground containers. Such containers shall not be uncovered until emptied of liquid fuel.

(5) Capacity of liquid containers. Individual storage containers shall not exceed 30,000 gallons water capacity.

(6) Installation of storage containers.

(a) Each storage container used exclusively in service station operation shall comply with the following table which specifies minimum distances to a building, groups of buildings, and adjoining property lines which may be built upon.

Water capacity per container (gallons)	Minimum distances: Aboveground and underground (feet)	Minimum distances: Between aboveground containers (feet)
Up to 2,000	25	3
Over 2,000	50	5

Note: The above distances may be reduced to not less than 10 feet for service station buildings of other than wood frame construction.

(i) Readily ignitible material including weeds and long dry grass, shall be removed within 10 feet of containers.

(ii) The minimum separation between LP–gas containers and flammable liquid tanks shall be 20 feet and the minimum separation between a container and the centerline of the dike shall be 10 feet.

(iii) LP–gas containers located near flammable liquid containers shall be protected against the flow or accumulation of flammable liquids by diking, diversion curbs, or grading.

(iv) LP–gas containers shall not be located within diked areas for flammable liquid containers.

(v) Field welding is permitted only on saddle plates or brackets which were applied by the container manufacturer.

(vi) When permanently installed containers are interconnected, provision shall be made to compensate for expansion, contraction, vibration, and settling of containers and interconnecting piping. Where flexible connections are used, they shall be of an approved type and shall be designed for a bursting pressure of not less than five times the vapor pressure of the product at 100°F. The use of nonmetallic hose is prohibited for interconnecting such containers.

(vii) Where high water table or flood conditions may be encountered protection against container flotation shall be provided.

(b) Aboveground containers shall be installed in accordance with this section.

(i) Containers may be installed horizontally or vertically.

(ii) Containers shall be protected by crash rails or guards to prevent physical damage unless they are so protected by virtue of their location. Vehicles shall not be serviced within 10 feet of containers.

(iii) Container foundations shall be of substantial masonry or other noncombustible material. Containers shall be mounted on saddles which shall permit expansion and contraction, and shall provide against the excessive concentration of stresses. Corrosion protection shall be provided for tank–mounting areas. Structural metal container supports shall be protected against fire. This protection is not required on prefabricated storage and pump assemblies, mounted on a common base, with container bottom not more than 24 inches above ground and whose water capacity is 2,000 gallons or less if the piping connected to the storage and pump assembly is sufficiently flexible to minimize the possibility of breakage or leakage in the event of failure of the container supports.

(c) Underground containers shall be installed in accordance with this section.

(i) Containers shall be given a protective coating before being placed under ground. This coating shall be equivalent to hot–dip galvanizing or to two coatings of red lead followed by a heavy coating of coal tar or asphalt. In lowering the container into place, care shall be exercised to minimize abrasion or other damage to the coating. Damage to the coating shall be repaired before back–filling.

(ii) Containers shall be set on a firm foundation (firm earth may be used) and surrounded with earth or sand firmly tamped in place. Backfill should be free of rocks or other abrasive materials.

(iii) A minimum of 2 feet of earth cover shall be provided. Where ground conditions make compliance with this requirement impractical, equivalent protection against physical damage shall be provided. The portion of the container to which manhole and other connections are attached need not be covered. If the location is subjected to vehicular traffic, containers shall be protected by a concrete slab or other cover adequate to prevent the weight of a loaded vehicle imposing concentrated direct loads on the container shell.

(7) Protection of container fittings. Valves, regulators, gages, and other container fittings shall be protected against tampering and physical damage.

(8) Transport truck unloading point.

(a) During unloading, the transport truck shall not be parked on public thoroughfares and shall be at least 5 feet from storage containers and shall be positioned so that shutoff valves are readily accessible.

(b) The filling pipe inlet terminal shall not be located within a building nor within 10 feet of any building or driveway. It shall be protected against physical damage.

(9) Piping, valves, and fittings.

(a) Piping may be underground, above ground, or a combination of both. It shall be well supported and protected against physical damage and corrosion.

(b) Piping laid beneath driveways shall be installed to prevent physical damage by vehicles.

(c) Piping shall be wrought iron or steel (black or galvanized), brass or copper pipe; or seamless copper, brass, or steel tubing and shall be suitable for a minimum pressure of 250 p.s.i.g. Pipe joints may be screwed, flanged, brazed, or welded. The use of aluminum alloy piping or tubing is prohibited.

(d) All shutoff valves (liquid or gas) shall be suitable for liquefied petroleum gas service and designed for not less than the maximum pressure to which they may be subjected. Valves which may be subjected to container pressure shall have a rated working pressure of at least 250 p.s.i.g.

(e) All materials used for valve seats, packing, gaskets, diaphragms, etc., shall be resistant to the action of LP–gas.

(f) Fittings shall be steel, malleable iron, or brass having a minimum working pressure of 250 p.s.i.g. Cast iron pipe fittings, such as ells, tees and unions shall not be used.

(g) All piping shall be tested after assembly and proved free from leaks at not less than normal operating pressures.

(h) Provision shall be made for expansion, contraction, jarring, and vibration, and for settling. This may be accomplished by flexible connections.

(10) Pumps and accessories. All pumps and accessory equipment shall be suitable for LP–gas service, and designed for not less than the maximum pressure to which they may be subjected. Accessories shall have a minimum rated working pressure of 250 p.s.i.g. Positive displacement pumps shall be equipped with suitable pressure actuated bypass valves permitting flow from pump discharge to storage container or pump suction.

(11) Dispensing devices.

(a) Meters, vapor separators, valves, and fittings in the dispenser shall be suitable for LP–gas service and shall be designed for a minimum working pressure of 250 p.s.i.g.

(b) Provisions shall be made for venting LP–gas contained in a dispensing device to a safe location.

(c) Pumps used to transfer LP–gas shall be equipped to allow control of the flow and to prevent leakage or accidental discharge. Means shall be provided outside the dispensing device to readily shut off the power in the event of fire or accident.

(d) A manual shutoff valve and an excess flow check valve shall be installed downstream of the pump and ahead of the dispenser inlet.

(i) Dispensing hose shall be resistant to the action of LP–gas in the liquid phase and designed for a minimum bursting pressure of 1,250 p.s.i.g.

(ii) An excess flow check valve or automatic shutoff valve shall be installed at the terminus of the liquid line at the point of attachment of the dispensing hose.

(e) LP–gas dispensing devices shall be located not less than 10 feet from aboveground storage containers greater than 2,000 gallons water capacity. The dispensing devices shall not be less then 20 feet from any building (not including canopies), basement, cellar, pit, or line of adjoining property which may be built upon and not less than 10 feet from sidewalks, streets, or thoroughfares. No drains or blowoff lines shall be directed into or in proximity to the sewer systems used for other purposes.

(i) LP–gas dispensing devices shall be installed on a concrete foundation or as part of a complete storage and dispensing assembly mounted on a common base, and shall be adequately protected from physical damage.

(ii) LP–gas dispensing devices shall not be installed within a building except that they may be located under a weather shelter or canopy provided this area is not enclosed on more than two sides. If the enclosing sides are adjacent to each other, the area shall be properly ventilated.

(f) The dispensing of LP–gas into the fuel container of a vehicle shall be performed by a competent attendant who shall remain at the LP–gas dispenser during the entire transfer operation.

(12) Additional standards. There shall be no smoking on the driveway of service stations in the dispensing areas or transport truck unloading areas. Conspicuous signs prohibiting smoking shall be posted within sight of the customer being served. Letters on such signs shall be not less than 4 inches high. The motors of all vehicles being fueled shall be shut off during the fueling operations.

(13) Electrical. Electrical equipment and installations shall conform to WAC 296–24–47505 (17) and (18).

(14) Fire protection. Each service station shall be provided with at least one approved portable fire extinguisher having at least an 8–B, C, rating.

[Order 73–5, § 296–24–47517, filed 5/9/73 and Order 73–4, § 296–24–47517, filed 5/7/73.]

Part F–2
STORAGE AND HANDLING OF ANHYDROUS AMMONIA

WAC

296–24–510 Storage and handling of anhydrous ammonia.
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WAC 296–24–510 Storage and handling of anhydrous ammonia.

[Order 73–5, § 296–24–510, filed 5/9/73 and Order 73–4, § 296–24–510, filed 5/7/73.]

WAC 296–24–51001 Scope. (1) This standard is intended to apply to the design, construction, location, installation, and operation of anhydrous ammonia systems including refrigerated ammonia storage systems.

(2) This standard does not apply to:

(a) Ammonia manufacturing plants.

(b) Refrigeration plants where ammonia is used solely as a refrigerant. Such systems are covered in American National Standard Safety Code for Mechanical Refrigeration, B–9.1. (See Appendix C for availability.) The provisions of ANSI B–9.1 are not appropriate to refrigerated ammonia storage systems as covered in this standard.

(c) Ammonia transportation pipelines.

[Order 73–5, § 296–24–51001, filed 5/9/73 and Order 73–4, § 296–24–51001, filed 5/7/73.]

WAC 296-24-51003 General. (1) The term "anhydrous ammonia" as used in this standard refers to the compound formed by a combination of two gaseous elements, nitrogen and hydrogen, in the proportion of one part nitrogen to three parts hydrogen by volume. Anhydrous ammonia may be in either gaseous or liquid form. It is not to be confused with aqua ammonia which is a solution of ammonia gas in water. Whenever the term "ammonia" appears in this standard, it is understood to mean anhydrous ammonia.

(2) It is important that personnel understand the properties of this gas and that they be thoroughly trained in safe practices for its storage and handling. Some of the important physical properties of ammonia are listed in (4) of this section.

(3) Gaseous ammonia liquefies under pressure at ambient temperature. Advantage of this characteristic is taken by industry and for convenience this commodity is usually shipped and stored under pressure as a liquid. When refrigerated to or below its normal boiling point (–28°F) it may be shipped and stored as a liquid at atmospheric pressure.

(4) Physical properties of ammonia:

Molecular symbol	NH_3
Molecular weight	17.032
Boiling point at one atmosphere (one atmosphere = 14.7 psia)	–28°F
Melting point at one atmosphere	–107.9°F
Critical temperature	271.4°F
Critical pressure	1657 psia
Latent heat at –28°F and one atmosphere	589.3 BTU per pound
Relative density of vapor compared to dry air at 32°F and one atmosphere	0.5970
Vapor density at –28°F and one atmosphere	0.05555 lb. per cu. ft.
Specific gravity of liquid at –28°F compared to water at 39.2°F	0.6819
Liquid density at –28°F and one atmosphere	42.57 lb. per cu. ft.
Specific volume of vapor at 32°F and one atmosphere	20.78 cu. ft. per pound
Flammable limits by volume in air at atmospheric pressure	16% to 25%
Ignition temperature (in a standard quartz container)	1562°F
Specific heat, gas, 15 C, one atm at constant pressure, C_p	0.5232 Btu/lb. degree °F
at constant volume, C_v	0.3995 Btu/lb. degree °F

(5) Experience has shown that ammonia is extremely hard to ignite and under normal conditions is a very stable compound. It takes temperatures of 840–930°F to cause it to dissociate slightly at atmospheric pressure. The flammable limits at atmospheric pressure are 16% to 25% by volume of ammonia in air. Experiments conducted by a nationally recognized laboratory indicated that an ammonia–air mixture in a standard quartz test container does not ignite below 1562°F. Ammonia is classified by the United States Department of Transportation and the U.S. Coast Guard as a nonflammable compressed gas for the purpose of transportation.

(6) Ammonia should be handled only by properly trained personnel. In no case shall ammonia be used in conjunction with chemicals unless the possible reactions have first been adequately investigated. Under some circumstances ammonia and ammonium compounds can form explosive products with other chemicals. For additional information refer to NFPA 491M "Manual on Hazardous Chemical Reactions" (see Appendix C for availability) and CG-388, the "Chemical Data Guide for Bulk Shipment by Water" (1969 Edition).

(7) Ammonia gas irritates the skin and mucous membrane. At 50 ppm its odor is detectable by most people. The maximum allowable concentration for an 8 hour working exposure is specified as 50 PPM by the American Conference of Government Industrial Hygienists. Because it serves as its own warning agent, no person will voluntarily remain in concentrations which are hazardous. At 5000 ppm it is rapidly fatal. Since ammonia gas is lighter than air, adequate ventilation is the best means of preventing any accumulation.

(8) The common metals are not attacked by dry ammonia. Zinc, copper and copper base alloys such as brass are subject to rapid destructive action by ammonia in the presence of water.

[Order 73-5, § 296-24-51003, filed 5/9/73 and Order 73-4, § 296-24-51003, filed 5/7/73.]

WAC 296-24-51005 Definitions. The following definitions are applicable to all sections of this chapter which include WAC 296-24-510 in the section number and shall be construed to have the meanings below. (1) "Approved" as used in these standards means:

(a) Listed by a recognized testing laboratory, or

(b) Recommended by the manufacturer as suitable for use with anhydrous ammonia and so marked, or

(c) Accepted by the authority having jurisdiction.

(2) "Appurtenance" refers to all devices such as pumps, compressors, safety relief devices, liquid-level gaging devices, valves and pressure gages.

(3) "Capacity" refers to the total volume of the container measured in U.S. gallons, unless otherwise specified.

(4) "Cylinder" means a container of 1000 pounds water capacity or less constructed in accordance with United States Department of Transportation Specifications.

(5) The "code" refers to the Unfired Pressure Vessel Code of the American Society of Mechanical Engineers (Section VIII of the ASME Boiler Construction Code), 1952, 1956, 1959, 1962, 1965, 1968 and 1971 editions, the joint code of the American Petroleum Institute and the American Society of Mechanical Engineers (API–ASME Code) 1951 edition, and subsequent amendments to or later editions of the same, as adopted.

(6) "Container" includes all vessels, tanks, cylinders or spheres used for transportation, storage or application of anhydrous ammonia.

(7) "Design pressure" is identical to the term "maximum allowable working pressure" used in the code.

(8) An "implement of husbandry" is a farm wagon–type tank vehicle of not over 3000 gallons capacity, used as a field storage "nurse tank" supplying the fertilizer to a field applicator and moved on highways only for bringing the fertilizer from a local source of supply to farms or fields or from one farm or field to another.

(9) "Filling density" means the per cent ratio of the weight of the gas in a container to the weight of water at 60°F that the container will hold. One lb. H^2O = 27.737 cu. in. at 60°F. For determining the weight capacity of the tank in pounds, the weight of a gallon (231 cubic inches) of water at 60°F in air shall be 8.32828 pounds.

(10) "Gas" refers to anhydrous ammonia in either the gaseous or liquefied state.

(11) "Gas mask" refers to gas masks approved by the Bureau of Mines. See American National Standard for Respiratory Protection, Z88.2. (See Appendix C for availability.)

(12) "DOT regulations" refer to hazardous materials regulations of the department of transportation (Title 49—Transportation, Code of Federal Regulations, Parts 171 to 190), including Specifications for Shipping Containers.

(13) "Systems" as used in these standards refers to an assembly of equipment consisting essentially of the container or containers, appurtenances, pumps, compressors, and interconnecting piping.

(14) The abbreviations "psig" and "psia" refer to pounds per square inch gage and pounds per square inch absolute, respectively.

(15) The terms "charging" and "filling" are used interchangeably and have the same meaning.

(16) "Trailer" as used in these standards refers to every vehicle designed for carrying persons or property and for being drawn by a motor vehicle and so constructed that no part of its weight except the towing device rests upon the towing vehicle.

(17) "Tank motor vehicle" means any motor vehicle designed or used for the transportation of anhydrous ammonia in any tank designed to be permanently attached to any motor vehicle or any container not permanently attached to any motor vehicle which by reason of its size, construction or attachment to any motor vehicle must be loaded and/or unloaded without being removed from the motor vehicle.

(18) "Semitrailer" refers to every vehicle designed for carrying persons or property and for being drawn by a motor vehicle and so constructed that some part of its weight and that of its load rests upon or is carried by another vehicle.

(19) "Safety relief valve" refers to an automatic spring loaded or equivalent type pressure activated device for gas or vapor service characterized by pop action upon opening, sometimes referred to as a pop valve. (Refer to American National Standard Terminology for Pressure Relief Devices, B95.1.)

(20) "Hydrostatic relief valve" refers to an automatic pressure activated valve for liquid service characterized by throttle or slow weep opening (nonpop action). (Refer to American National Standard Terminology for Pressure Relief Devices, B95.1.)

[Order 74-27, § 296-24-51005, filed 5/7/74; Order 73-5, § 296-24-51005, filed 5/9/73 and Order 73-4, § 296-24-51005, filed 5/7/73.]

WAC 296-24-51007 Use of water in emergencies. (1) The concentration of ammonia vapor in air can effectively be reduced by the use of adequate volumes of water applied through spray or fog nozzles.

(2) Water should be used on liquid ammonia spills only if sufficient water is available. For the purpose of this section, sufficient water may be taken to be 100 parts of water to one part of ammonia.

(3) If an ammonia container is exposed to fire and cannot be removed, water should be used to cool it.

(4) Under some circumstances ammonia in a container is colder than the available water supply. Under these circumstances water should not be sprayed on the container walls since it would heat the ammonia and aggravate any gas leak.

(5) If it is found necessary to dispose of ammonia, as from a leaking container, liquid ammonia should be discharged into a vessel containing water sufficient to absorb it. Sufficient water may be taken to be ten parts of water per part ammonia. The ammonia should be injected into the water as near the bottom of the vessel as practical.

[Order 73-5, § 296-24-51007, filed 5/9/73 and Order 73-4, § 296-24-51007, filed 5/7/73.]

WAC 296-24-51009 Basic rules. This section applies to all sections of WAC 296-24-510 in the section number unless otherwise noted.

(1) Approval of equipment and systems. Each appurtenance shall be approved in accordance with (1)(a), (b), (c), and (d) of this section.

(a) It was installed before February 8, 1973 and was approved and tested, and installed in accordance with either the provisions of the American National Standard for the Storage and Handling of Anhydrous Ammonia, K61.1, or the Fertilizer Institute Standards for the Storage and Handling of Agricultural Anhydrous Ammonia, M-1, in effect at the time of installation; or

(b) It is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriter's Laboratories Inc. and Factory Mutual Research Corporation; or

(c) It is a type which no nationally recognized testing laboratory does, or will undertake to, accept, certify, list, label, or determine to be safe; and such equipment is inspected or tested by any federal, state, municipal, or other local authority responsible for enforcing occupational safety provisions of a federal, state, municipal or other local law, code, or regulation pertaining to the storage, handling, transport, and use of anhydrous ammonia, and found to be in compliance with either the provisions of the American National Standard for the Storage and Handling of Anhydrous Ammonia, K61.1, or the Fertilizer Institute Standards for the Storage and Handling of Agricultural Anhydrous Ammonia, M-1, in effect at the time of installation; or

(d) It is a custom-designed and custom-built unit, which no nationally recognized testing laboratory, or federal, state, municipal or local authority responsible for the enforcement of a federal, state, municipal, or local law, code or regulation pertaining to the storage, transportation and use of anhydrous ammonia is willing to undertake to accept, certify, list, label or determine to be safe, and the employer has on file a document attesting to its safe condition following the conduct of appropriate tests. The document shall be signed by a registered professional engineer or other person having special training or experience sufficient to permit him/her to form an opinion as to safety of the unit involved. The document shall set forth the test bases, test data and results, and also the qualifications of the certifying person.

(e) For the purposes of this section the word "listed" means that equipment is of a kind mentioned in a list which is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment, and states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner. "Labeled" means there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment, and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner. "Certified" means it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and it bears a label, tag, or other record of certification.

(2) Requirements for construction, original test and requalification of not-refrigerated containers.

(a) Containers used with systems covered in subsections WAC 296-24-51011 and 296-24-51017 through 296-24-51021 of this section shall be constructed and tested in accordance with the code except that construction under Table UW-12 at a basic joint efficiency of under 80 percent is not authorized.

(i) Containers built according to the code do not have to comply with paragraphs UG-125 to UG-128, inclusive, and paragraphs UG-132 and UG-133 of the code.

(b) Containers exceeding 36 inches in diameter or 250 gallons water capacity shall be constructed to comply with one or more of the following:

(i) Containers shall be stress relieved after fabrication in accordance with the code, or

(ii) Cold-formed heads, when used, shall be stress relieved or,

(iii) Hot-formed heads shall be used.

(c) Welding to the shell, head, or any other part of the container subject to internal pressure shall be done in compliance with WAC 296-24-51005(5). Other welding is permitted only on saddle plates, lugs, or brackets attached to the container by the container manufacturer.

(d) Containers used with systems covered by WAC 296-24-51009 (3)(b)(iv) shall be constructed and tested in accordance with the DOT specifications.

(e) The provisions of (2)(a) of this section shall not be construed as prohibiting the continued use or reinstallation of containers constructed and maintained in accordance with the 1949, 1950, 1952, 1956, 1959, 1962, 1965 and 1968 editions of the Unfired Pressure Vessel Code of the ASME or any revisions thereof in effect at the time of fabrication.

(3) Markings on nonrefrigerated containers and systems other than DOT containers.

(a) System nameplates, when required, shall be permanently attached to the system so as to be readily accessible for inspection and shall include markings as prescribed in (3)(b) of this section.

(b) Each container or system covered in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be marked as specified in the following:

(i) With a marking identifying compliance with the rules of the code under which the container is constructed.

(ii) With a notation on the container and system nameplate when the system is designed for underground installation.

(iii) With the name and address of the supplier of the container or the trade name of the container and with the date of fabrication.

(iv) With the water capacity of the container in pounds at 60F or gallons, U.S. standard.

(v) With the design pressure in pounds per square inch gage.

(vi) With the wall thickness of the shell and heads.

(vii) With marking indicating the maximum level to which the container may be filled with liquid anhydrous ammonia at temperatures between 20°F and 100°F except on containers provided with fixed maximum level indicators, such as fixed length dip tubes, or containers that are filled by weight. Markings shall be in increments of not more than 20°F.

(viii) With the outside surface area in square feet.

(ix) With minimum temperature in Fahrenheit for which the container is designed.

(x) Marking specified on container shall be on the container itself or on a nameplate permanently affixed thereto.

(c) All main operating valves on permanently installed containers having a capacity of over three thousand water gallons shall be identified to show whether the valve is in liquid or vapor service. The recommended method of identification may be legend or color code as specified in (i) and (ii) as follows:

(i) Legend: The legend LIQUID (or LIQUID VALVE), VAPOR (or VAPOR VALVE), as appropriate, shall be placed on or within twelve inches of the valve by means of a stencil tag, or decal.

(ii) Color code: Liquid valves shall be painted orange and vapor valves shall be painted yellow. The legend ORANGE–LIQUID, YELLOW–VAPOR shall be displayed in one or more conspicuous places at each permanent storage location. The legend shall have letters at least two inches high and shall be placed against a contrasting background. This is in accordance with American National Standard A13.1 "Schemes for Identification of Piping Systems"—1956, Page 5.

(4) Marking refrigerated containers. (See WAC 296–24–51013(3). Marking refrigerated containers.)

(5) Location of containers.

(a) Consideration shall be given to the physiological effects of ammonia as well as to adjacent fire hazards in selecting the location for a storage container. Containers shall be located outside of buildings or in buildings or sections thereof especially approved for this purpose.

(b) Containers shall be located at least 50 feet from a dug well or other sources of potable water supply, unless the container is a part of a water treatment installation.

(c) The location of permanent storage containers shall be outside densely populated areas.

(d) Container locations shall comply with the following table:

Nominal Capacity of Container	Minimum Distances (feet) from Container to:		
	Line of Adjoining Property Which may be Built upon, Highways & Mainline of Railroad	Place of Public Assembly	Institution Occupancy
Over 500 to 2,000	25	150	250
Over 2,000 to 30,000	50	300	500
Over 30,000 to 100,000	50	450	750
Over 100,000	50	600	1,000

(e) Storage areas shall be kept free of readily ignitable materials such as waste, weeds and long dry grass.

(6) Container appurtenances.

(a) All appurtenances shall be designed for not less than the maximum working pressure of that portion of the system on which they are installed. All appurtenances shall be fabricated from materials proved suitable for anhydrous ammonia service.

(b) All connections to containers except safety relief devices, gaging devices, or those fitted with a No. 54 drill size orifice shall have shut–off valves located as close to the container as practicable.

(c) Excess flow valves where required by these standards shall close automatically at the rated flows of vapor or liquid as specified by the manufacturer. The connections and line including valves and fittings being protected by an excess flow valve shall have a greater capacity than the rated flow of the excess flow valve.

(d) Liquid level gaging devices that require bleeding of the product to the atmosphere and which are so constructed that outward flow will not exceed that passed by a No. 54 drill size opening need not be equipped with excess flow valves.

(e) Openings from container or through fittings attached directly on container to which pressure gage connections are made need not be equipped with excess flow valves if such openings are not larger than No. 54 drill size.

(f) Excess flow and back pressure check valves where required by these standards shall be located inside of the container or at a point outside as close as practicable to where the line enters the container. In the latter case, installation shall be made in such manner that any undue stress beyond the excess flow or back pressure check valve will not cause breakage between the container and the valve.

(g) Excess flow valves shall be designed with a bypass, not to exceed a No. 60 drill size opening to allow equalization of pressures.

(h) Shut–off valves provided with an excess flow valve shall be designed for proper installation in a container connection so that the excess flow valve will close should the shutoff valve break.

(i) All excess flow valves shall be plainly and permanently marked with the name or trade–mark of the manufacturer, the catalog number, and the rated capacity.

(7) Piping, tubing and fittings.

(a) All piping, tubing and fittings shall be made of material suitable for anhydrous ammonia service.

(b) All piping, tubing and fittings shall be designed for a pressure not less than the maximum pressure to which they may be subjected in service.

(c) All piping shall be well supported and provision shall be made for expansion and contraction. All refrigeration system piping shall conform to the Refrigeration Piping Code (ANSI B31.5 1966 addenda B31.1a–1968), a section of the American Standard Code for Pressure Piping, as it applies to ammonia.

(d) Piping used on nonrefrigerated systems shall be at least ASTM A–53–1969 Grade B Electric Resistance Welded and Electric Flash Welded Pipe or equal. Such pipe shall be at least Schedule 40 when joints are welded, or welded and flanged. Such pipe shall be at least Schedule 80 when joints are threaded. Brass, copper, or galvanized steel pipe or tubing shall not be used.

(e) All metal flexible connections for permanent installations shall have a minimum working pressure of 250 psig (safety factor of 4). For temporary installations, hose meeting the requirement of WAC 296–24–51009(8) may be used.

(f) Cast iron fittings shall not be used but this shall not prohibit the use of fittings made specially for ammonia service of malleable or nodular iron such as Specification ASTM A47 or ASTM A395.

(g) Provisions shall be made for expansion, contraction, jarring, vibration, and for settling.

(h) Adequate provisions shall be made to protect all exposed piping from physical damage that might result from moving machinery, the presence of automobiles or trucks, or any other undue strain that may be placed upon the piping.

(i) Joint compounds shall be resistant to ammonia.

(j) After assembly, all piping and tubing shall be tested and proved to be free from leaks at a pressure not less than the normal operating pressure of the system.

(8) Hose specification.

(a) Hose used in ammonia service and subject to container pressure shall conform to the joint Rubber Manufacturers Association and the Fertilizer Institute "Hose Specifications for Anhydrous Ammonia" (see Appendix B).

(b) Hose subject to container pressure shall be designed for a minimum working pressure of 350 psig and a minimum burst pressure of 1750 psig. Hose assemblies, when made up, shall be capable of withstanding a test pressure of 500 psig.

(c) Hose and hose connections located on the low pressure side of flow control or pressure reducing valves on devices discharging to atmospheric pressure shall be designed for the maximum low side working pressure. All connections shall be designed, constructed, and installed so that there will be no leakage when connected.

(d) Where liquid transfer hose is not drained of liquid upon completion of transfer operations, such hose shall be equipped with an approved shut-off valve at the discharge end. Provision shall be made to prevent excessive hydrostatic pressure in the hose. (See WAC 296-24-51009 (9)(j).)

(e) On all hose one-half inch O.D. and larger, used for the transfer of anhydrous ammonia liquid or vapor, there shall be etched, cast, or impressed at five-foot intervals the following information:

"Anhydrous Ammonia"
xxx psig (Maximum working pressure)
Manufacturer's Name or Trademark
Year of Manufacture

(9) Safety relief devices.

(a) Every container used in systems covered by WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be provided with one or more safety relief valves of the spring-loaded or equivalent type. The discharge from safety relief valves shall be vented away from the container, upward and unobstructed to the atmosphere. All safety relief valve discharge openings shall have suitable raincaps that will allow free discharge of the vapor and prevent the entrance of water. Provision shall be made for draining condensate which may accumulate. The rate of the discharge shall be in accordance with the provisions of Appendix A.

(b) Container safety relief valves shall be set to start-to-discharge as follows, with relations to the design pressure of the container.

Containers	Minimum	Maximum*
ASME U-68, U-69	110%	125%
ASME U-200, U-201	95%	100%
ASME 1952, 1956, 1959, 1962, 1965, 1968 or 1971	95%	100%
API-ASME	95%	100%
U.S. Coast Guard	(As required by USCG regulations)	
DOT	(As required by DOT regulations)	

*Note: A relief valve manufacturer's tolerance of plus 10% is permitted.

(c) Safety relief devices used in systems covered by WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be constructed to discharge at not less than the rates required in subsection (9)(a) before the pressure is in excess of 120% (not including the 10% tolerance referred to in subsection (9)(b)) of the maximum permitted start-to-discharge pressure setting of the device.

(d) Safety relief valves shall be so arranged that the possibility of tampering will be minimized. If the pressure setting adjustment is external, the relief valves shall be provided with means for sealing the adjustment.

(e) Shut-off valves shall not be installed between the safety relief valves and the containers or systems described in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021, except that a shut-off valve may be used where the arrangement of this valve is such as always to afford required capacity flow through the relief valves.

Note: The above exception is made to cover such cases as a threeway valve installed under two safety relief valves, each of which has the required rate of discharge and is so installed as to allow either of the safety relief valves to be closed off, but does not allow both safety valves to be closed off at the same time. Another exception to this may be where two separate relief valves are installed with individual shut-off valves. In this case, the two shut-off valve stems shall be mechanically interconnected in a manner which will allow full required flow of one safety relief valve at all times. Still another exception is a safety relief valve manifold which allows one valve of two, three, four or more to be closed off and the remaining valve or valves will provide not less than the rate of discharge shown on the manifold nameplate.

(f) Safety relief valves shall have direct communication with the vapor space of the container.

(g) Each safety relief valve used with systems described in WAC 296-24-51011, 296-24-51017, 296-24-51019 and 296-24-51021 shall be plainly and permanently marked as follows:

(i) With the letters "AA" or the symbol "NH3."

(ii) The pressure in pounds per square inch gage (psig) at which the valve is set to start-to-discharge.

(iii) The rate of discharge of the valve in cubic feet per minute of air at 60F and atmospheric pressure (14.7 psia).

(iv) The manufacturer's name and catalog number.

For example, a safety relief valve marked AA–250–4200 (air) would mean that this valve is suitable for use on an anhydrous ammonia container; that it is set to start–to–discharge at 250 psig; and that its rate of discharge (see WAC 296–24–51009 (8)(a) to (c)) is 4200 cubic feet per minute of air.

(h) The flow capacity of the safety relief valve shall not be restricted by any connection to it on either the upstream or downstream side.

(i) The manufacturer or supplier of a safety relief valve manifold shall publish complete data showing the flow rating through the combined assembly of the manifold with safety relief valves installed. The manifold flow rating shall be determined by testing the manifold with all but one valve discharging. If one or more openings have restrictions not present in the remaining openings, the restricted opening or openings or those having the lowest flow shall be used to establish the flow rate marked on the manifold nameplate. The marking shall be similar to that required in subsection (9)(g) for individual valves.

(j) A hydrostatic relief valve shall be installed between each pair of valves in the liquid ammonia piping or hose where liquid may be trapped so as to relieve into the atmosphere at a safe location.

(k) Discharge from safety relief devices shall not terminate in or beneath any building.

(10) Safety. See CGA Pamphlet G–2, TFI Operational Safety Manual M–2 and MCA Safety Data Sheet SD–8 (see Appendix C for availability).

(a) Personnel required to handle ammonia shall be trained in safe operating practices and the proper action to take in the event of emergencies. Personnel shall be instructed to use the equipment listed in subsection (10)(c) in the event of an emergency. (Rev. 1–22–76)

(b) If a leak occurs in an ammonia system, the personnel trained for and designated to act in such emergencies shall:

(i) See that persons not required to deal with an emergency are evacuated from the contaminated area.

(ii) Put on a suitable gas mask.

(iii) Wear gauntlet type plastic or rubber gloves and wear plastic or rubber suits in heavily contaminated atmospheres.

(iv) Shut off the appropriate valves.

(c) All storage systems shall have on hand, as a minimum, the following equipment for emergency and rescue purposes:

*(i) One full face gas mask with anhydrous ammonia refill canisters.

**(ii) One pair of protective gloves.

**(iii) One pair of protective boots.

**(iv) One protective slicker and/or protective pants and jacket.

(v) Easily accessible shower and/or at least 50 gallons of clean water in an open top container.

(iv) Tight fitting vented goggles or one full face shield.

*An ammonia canister is effective for short periods of time in light concentrations of ammonia vapor, generally 15 minutes in concentrations of 3% and will not protect breathing in heavier concentrations. If ammonia vapors are detected when mask is applied the concentration is too high for safety. The life of a canister in service is controlled by the percentage of vapors to which it is exposed. Canisters must not be opened until ready for use and should be discarded after use. Unopened canisters may be guaranteed for as long as three years. All should be dated when received because of this limited life. In addition to this protection, an independently supplied air mask of the type used by fire departments may be used for severe emergencies.

**Gloves, boots, slickers, jackets and pants shall be made of rubber or other material impervious to ammonia.

(d) Where several persons are usually present, additional safety equipment may be desirable.

(e) Each tank motor vehicle transporting anhydrous ammonia, except farm applicator vehicles, shall carry a container of at least five gallons of water and shall be equipped with a full face gas mask, a pair of tight–fitting goggles or one full face shield. The driver shall be instructed in their use and the proper action to take to provide for his/her safety.

(f) If a leak occurs in transportation equipment and it is not practical to stop the leak, the driver should move the vehicle to an isolated location away from populated communities or heavily traveled highways.

(g) If liquid ammonia contacts the skin or eyes, the affected area should be promptly and thoroughly flushed with water. Do not use neutralizing solutions or ointments on affected areas. A physician shall treat all cases of eye exposure to liquid ammonia.

(11) Filling densities. (See WAC 296–24–51005(9).)

(a) The filling densities for nonrefrigerated containers shall not exceed the following:

	Aboveground	Underground
(i) Uninsulated	56%*	58%
(ii) Insulated	57%	
(iii) DOT containers shall be filled in accordance with DOT regulations.		

*This corresponds to 82% by volume at –28F, 85% by volume at 5F, 87.5% by volume at 30F, and 90.6% by volume at 60F.

(b) The filling density for refrigerated storage tanks temperature corresponding to the vapor pressure at the start–to–discharge pressure setting of the safety relief valve.

(c) If containers are to be filled according to liquid level by any gaging method other than a fixed length dip tube gage, each container should have a thermometer well so that the internal liquid temperature can be easily determined and the amount of liquid and vapor in the container corrected to a 60°F basis.

(12) Transfer of liquids.

(a) Anhydrous ammonia shall always be at a temperature suitable for the material of construction and design of the receiving containers. Ordinary steels are not suitable for refrigerated ammonia. See Appendix R of API Standard 620 "Recommended Rules for Design and Construction of Large Welded Low–Pressure Storage Tanks" for materials for low temperature service.

(b) At least one attendant shall supervise the transfer of liquids from the time the connections are first made until they are finally disconnected.

(c) Flammable gases or gases which will react with ammonia (such as air) shall not be used to unload tank cars or transport trucks.

(d) Containers shall be charged or used only upon authorization of the owner.

(e) Containers shall be gaged and charged only in the open atmosphere or in buildings approved for that purpose.

(f) Pumps used for transferring ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Pumps shall be designed for at least 250 psig working pressure.

(ii) Positive displacement pumps shall have installed, off the discharge port, a constant differential relief valve discharging into the suction port of the pump through a line of sufficient size to carry the full capacity of the pump at relief valve setting, which setting and installation shall be according to pump manufacturer's recommendations.

(iii) On the discharge side of the pump, before the relief valve line, there shall be installed a pressure gage graduated from 0 to 400 psig.

(iv) Plant piping shall contain shutoff valves located as close as practical to pump connections.

(g) Compressors used for transferring or refrigerating ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Compressors, except those used for refrigeration, shall be designed for at least 250 psig working pressure. Crank cases of compressors not designed to withstand system pressure shall be protected with a suitable safety relief valve.

(ii) Plant piping shall contain shutoff valves located as close as practical to compressor connections.

(iii) A safety relief valve large enough to discharge the full capacity of the compressor shall be connected to the discharge before any shutoff valve.

(iv) Compressors shall have pressure gages at suction and discharge graduated to at least one and one-half times the maximum pressure that can be developed.

(v) Adequate means, such as drainable liquid trap, may be provided on the compressor suction to minimize the entry of liquid into the compressor.

(vi) Where necessary to prevent contamination, an oil separator shall be provided on the discharge side of the compressor.

(h) Loading and unloading systems shall be protected by suitable devices to prevent emptying of the storage container or the container being loaded or unloaded in the event of severance of the hose. Backflow check valves or properly sized excess flow valves shall be installed where necessary to provide such protection. In the event that such valves are not practical, remotely operated shutoff valves may be installed.

(i) Meters used for the measurement of liquid anhydrous ammonia shall be recommended and labeled for ammonia service by the manufacturer.

(i) Liquid meters shall be designed for a minimum working pressure of 250 psig.

(ii) The metering system shall incorporate devices that will prevent the inadvertent measurement of vapor.

(13) Tank car unloading points and operations.

(a) Provisions for unloading tank cars shall conform to the regulations of the department of transportation.

(b) Unloading operations shall be performed by reliable persons properly instructed and made responsible for careful compliance with all applicable procedures.

(c) Caution signs shall be so placed on the track or car as to give necessary warning to persons approaching car from open end or ends of siding and shall be left up until after car is unloaded and disconnected from discharge connections. Signs shall be of metal or other suitable material, at least 12 by 15 inches in size and bear the words "STOP—Tank car connected" or "STOP—Men at work" the word "STOP," being in letters at least 4 inches high and the other words in letters at least 2 inches high. The letters shall be white on a blue background.

(d) The track of a tank car siding shall be substantially level.

(e) Brakes shall be set and wheels blocked on all cars being unloaded.

(f) Tank cars of anhydrous ammonia shall be unloaded only at approved locations meeting the requirements of WAC 296-24-51009 (9)(c) and (12)(h) of this section.

(14) Liquid level gaging device.

(a) Each container except those filled by weight shall be equipped with an approved liquid level gaging device.

(b) All gaging devices shall be arranged so that the maximum liquid level to which the container is filled is readily determined. (See WAC 296-24-51009 (4)(b)(vii).)

(c) Gaging devices that require bleeding of the product to the atmosphere such as the rotary tube, fixed tube, and slip tube devices, shall be designed so that the maximum opening of the bleed valve is not larger than No. 54 drill size unless provided with an excess flow valve. (This requirement does not apply to farm vehicles used for the application of ammonia as covered in WAC 296-24-51021.)

(d) Gaging devices shall have a design pressure equal to or greater than the design pressure of the container on which they are installed.

(e) Fixed liquid level gages shall be so designed that the maximum volume of the container filled by liquid shall not exceed 85% of its water capacity. The coupling into which the fixed liquid level gage is threaded must be placed at the 85% level of the container. If located elsewhere, the dip tube of this gage must be installed in such a manner that it cannot be readily removed.

Note: This does not apply to refrigerated storage.

(f) Gage glasses of the columnar type shall be restricted to stationary storage installation. They shall be equipped with shutoff valves having metallic handwheels, with excess-flow valves, and with extra heavy glass adequately protected with a metal housing

applied by the gage manufacturer. They shall be shielded against the direct rays of the sun.

(15) Painting of containers. Aboveground uninsulated containers should have a reflective surface maintained in good condition. White is recommended for painted surfaces, but other light reflecting colors are acceptable.

(16) Electrical equipment and wiring.

(a) Electrical equipment and wiring for use in ammonia installations shall be general purpose or weather resistant as appropriate.

(b) Where concentrations of ammonia in air in excess of 16% by volume are likely to be encountered, electrical equipment and wiring shall be of a type specified by and be installed in accordance with National Electrical Code, NFPA 70 (ANSI-C1), for Class I, Group D locations.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51009, filed 11/13/80; Order 76-6, § 296-24-51009, filed 3/1/76; Order 74-27, § 296-24-51009, filed 5/7/74; Order 73-5, § 296-24-41009, filed 5/9/73 and Order 73-4, § 296-24-51009, filed 5/7/73.]

WAC 296-24-51011 Systems utilizing stationary, pier-mounted or skid-mounted aboveground or underground, nonrefrigerated storage. This section applies to stationary, pier-mounted, skid-mounted, aboveground or underground, nonrefrigerated storage installations utilizing containers other than those constructed in accordance with department of transportation specifications. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design pressure and construction of containers. The minimum design pressure for nonrefrigerated aboveground containers shall be 250 psig. (See WAC 296-24-51009 (2)(a)(i).)

Note: U-68 and U-69 ASME Code containers with a design pressure of 200 psig are acceptable if recertified to 250 psig and equipped with safety relief valves set at 250 psig as permitted in WAC 296-24-51009 (9)(b).

(2) Container valves and accessories, filling and discharging connections.

(a) Each filling connection shall be provided with combination back-pressure check valve and excess flow valve; one double or two single back-pressure check valves; or a positive shutoff valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(b) All vapor and liquid connections, except safety relief valves and those specifically exempt in WAC 296-24-51009 (6)(d) and (e) shall be equipped with approved excess flow valves; or in lieu thereof, may be fitted with approved quick-closing internal valves which, except during operating periods, shall remain closed.

(c) Each storage container shall be provided with a pressure gage graduated from 0 to 400 psig. Gages shall be designated for use in ammonia service.

(d) All containers shall be equipped with an approved vapor return valve.

(e) All containers shall be equipped with a fixed maximum liquid level gage.

(3) Safety relief devices.

(a) Every container shall be provided with one or more safety relief valves of spring-loaded or equivalent type and shall comply with the following:

(i) The discharge from safety relief valves shall be directed away from the container upward and unobstructed to the open air. Vent pipes shall not be restrictive or smaller in size than the safety relief outlet connection. All safety relief valve discharges shall have suitable rain caps that will allow free discharge of the vapor and prevent the entrance of water. Suitable provision shall be made for draining condensate which may accumulate.

(ii) If desired, vent pipes from two or more safety relief devices located on the same unit, or similar lines from two or more different units, may be run into a common header, provided the cross-sectional area of such header is at least equal to the sum of the cross-sectional areas of the individual vent pipes.

(b) The rate of discharge of spring-loaded safety relief valves installed on underground containers may be reduced to a minimum of 30 percent of the rate of discharge specified in Appendix A. Containers so protected shall not be uncovered after installation until the liquid ammonia has been removed. Containers which may contain liquid ammonia before being installed underground and before being completely covered with earth are to be considered aboveground containers when determining the rate of discharge requirements of the safety relief valves.

(c) On underground installations where there is a probability of the manhole or housing becoming flooded, the discharge from vent lines shall be located above the high water level. All manholes or housings shall be provided with ventilated louvres or their equivalent, the area of such openings equaling or exceeding combined discharge areas of safety relief valves and vent lines which discharge their content into the manhole housing.

(4) Installation of storage containers.

(a) Containers installed aboveground shall be provided with substantial reinforced concrete footings and foundations or structural steel supports mounted on reinforced concrete foundations. In either case, the reinforced concrete foundations or footings shall extend below the established frost line and shall be of sufficient width and thickness to support the total weight of the containers and contents adequately. The foundation shall maintain the lowest point of the tank at not less than 18 inches above the ground. Floating type foundations shall also be acceptable providing the foundations are designed to adequately support the tank, contents and pumping equipment. (See WAC 296-24-51009(7).)

(b) Horizontal aboveground containers shall be mounted on foundations in such a manner as to permit expansion and contraction. Every container shall be supported so as to prevent the concentration of excessive loads on the supporting portion of the shell. The bearing afforded by the saddles shall extend over at least one third of the circumference of the shell. Suitable means for preventing corrosion shall be provided on that portion of the container in contact with the foundations or saddles.

(c) Containers buried underground shall be placed so that the top of the container is at least one foot below the surface of the ground. Should ground conditions make compliance with these requirements impracticable, precautions shall be taken to prevent physical damage to the container. It is not necessary to cover the portion of the container to which a manhole and other connections are affixed when necessary to prevent floating, containers shall be securely anchored or weighted.

(d) Underground containers shall be set on firm foundations (firm earth may be used) and surrounded with soft earth or sand well tamped in place. As a further means of resisting corrosion, the container, prior to being placed underground, shall be given a protective coating satisfactory to the authority having jurisdiction. Such protective coating shall be equivalent to hot dip galvanizing, or to two preliminary coatings of red lead followed by a heavy coating of coal tar or asphalt. The container thus coated shall be lowered into place in such a manner as to prevent abrasion or other damage to the coating.

(e) Distance between aboveground and underground containers of over 1,200 gallons capacity shall be at least five feet.

(f) Secure anchorage or adequate pier height shall be provided against container flotation wherever sufficiently high flood water might occur.

(5) Reinstallation of containers.

(a) Containers once installed underground shall not later be reinstalled aboveground or underground, unless they successfully withstand hydrostatic pressure retests at the pressure specified for the original hydrostatic test as required by the code under which the tank was constructed and show no evidence of serious corrosion.

(b) Where containers are reinstalled underground, the corrosion resistant coating shall be put in good condition; see WAC 296-24-51011 (4)(d). Where containers are reinstalled aboveground, safety relief devices or gaging devices shall comply with WAC 296-24-51009(9) and 296-24-51011(3) respectively for aboveground containers.

(6) Marking of containers. Each container or group of containers shall be marked on at least two sides with the words "anhydrous ammonia" or "caution—ammonia" in sharply contrasting colors with letters not less than four inches high.

(7) Protection of container appurtenances.

(a) Valves and other appurtenances shall be protected against physical damage. Main container shut-off valves shall be kept closed and locked when the installation is unattended. If the facility is protected against tampering by fencing or other suitable means, valve locks are not required.

(b) All connections to underground containers should be located within a substantial dome, housing or manhole fitted with a substantial removable cover. Appurtenances shall also be protected during the transit of containers intended for installation underground.

(c) Storage containers need not be grounded.

(8) Identification. A sign shall be displayed in a conspicuous place stating the name, address, and phone number of the nearest representative, agent, or owner of the storage system.

[Order 76-6, § 296-24-51011, filed 3/1/76; Order 73-5, § 296-24-51011, filed 5/9/73 and Order 73-4, § 296-24-51011, filed 5/7/73.]

WAC 296-24-51013 Refrigerated storage. This section applies specifically to systems utilizing tanks for the storage of anhydrous ammonia under refrigerated conditions. All basic rules of WAC 296-24-51009 apply to this section unless inconsistent with the requirements of this section.

(1) Design of tanks.

(a) Tanks may be designed for any storage pressure desired as determined by economical design of the refrigerated system.

(b) The design temperature shall be the minimum temperature to which the container will be refrigerated and shall be so designated.

(c) Containers with a design pressure exceeding 15 p.s.i.g. shall be constructed in accordance with WAC 296-24-51009(2) and the material shall be selected from those listed in API Standards 620, 4th edition 1970, Recommended Rules for Design and Construction of Large, Welded Low-Pressure Storage Tanks, Tables 2.02, R.2.1, R.2.2, R.2.3 or R.2.4.

(d) Tanks with a design pressure of 15 psig and less shall be constructed in accordance with the general requirements of API Standard 620, 4th edition, 1970, including Appendix R.

(e) When austenitic steels or nonferrous materials are used, the ASME Code shall be used as a guide in selection of materials for use at the design temperature.

(f) The filling density for refrigerated storage containers shall be such that the container will not be liquid full at a liquid temperature corresponding to the vapor pressure at the start-to-discharge pressure setting of the safety-relief valve. (New 1-22-76)

(2) Installation of storage tanks.

(a) Tanks shall be supported on suitable noncombustible foundations designed to accommodate the type of tank being used.

(b) Adequate protection against flotation or other water damage shall be provided wherever high flood water might occur.

(c) Tanks for product storage at less than 32F shall be supported in such a way, or heat shall be supplied, to prevent the effects of freezing and consequent frost heaving.

(d) The area surrounding a refrigerated tank or group of tanks shall be provided with drainage, or shall be diked to prevent accidental discharge of liquid from spreading to uncontrolled areas.

(e) When drainage is employed, a slope of not less than one percent shall be provided. The drainage system shall terminate in an impounding basin having a capacity as large as the largest tank served.

(f) Provision shall be made for drainage of rain water from the diked or impounding area. Such drainage shall not permit the release of ammonia.

(g) When a dike surrounding the tank is employed, the capacity of the diked enclosure shall be as large as the largest tank served.

(h) The walls of a diked enclosure or the wall of an impounding basin used in a drainage system shall be of earth, steel or concrete designed to be liquid tight and to withstand the hydrostatic pressure and the temperature. Earth walls shall have a flat top at least 2 feet wide. The slope shall be stable and consistent with the angle of repose of the earth used.

(i) The ground in an impounding basin or within a diked enclosure, should be graded so that small spills, or the early part of a large spill, will accumulate at one side or corner contacting a relatively small area of ground and exposing a relatively small surface area for heat gain. Shallow channels in the ground surface or low curbs of earth can help guide the liquid to these low areas without contacting a large ground area.

(3) Marking refrigerated containers.

(a) Each refrigerated container shall be marked with a nameplate on the outer covering in an accessible place as specified in the following:

(i) With the name and address of the builder and the date of fabrication.

(ii) With the maximum volume or weight of the product whichever is most meaningful to user.

(iii) With the design pressure.

(iv) With the minimum temperature in degrees Fahrenheit for which the container was designed.

(v) With the maximum allowable water level to which the container may be filled for the test purposes.

(vi) With the density of the product in pounds per cubic foot for which the container was designed.

(vii) With the maximum level to which the container may be filled with liquid anhydrous ammonia.

(4) Tank valves, fill pipes and discharge pipes.

(a) Shut–off valves shall be:

(i) Provided for all connections except those with a No. 54 drill size restriction, plugs, safety valves, thermometer wells, and

(ii) Located as close to the tank as practicable.

(b) When operating conditions make it advisable, a check valve shall be installed on the fill connection and a remotely operated shut–off valve on other connections located below the maximum liquid level.

(5) Safety relief devices.

(a) Safety relief valves shall be set to start–to–discharge at a pressure not in excess of the design pressure of the tank and shall have a total relieving capacity sufficient to prevent a maximum pressure in a tank of more than 120% of the design pressure.

(b) The total relieving capacity shall be the larger requirement of WAC 296–24–51013 (5)(b)(i) or (ii).

(i) Possible refrigeration system upset such as (A) cooling water failure, (B) power failure, (C) instrument air or instrument failure, (D) mechanical failure of any equipment, (E) excessive pumping rates, (F) changing atmospheric conditions.

(ii) Either one of the following formulas for fire exposure, (1) for valve manufacturers who use weight of vapors to be relieved as basis for classifying valves:

$$W = \frac{34{,}500\ F\ A^{0.82}}{L}$$

or (2) for valve manufacturers that classify valves on the basis of air flow:

$$Q_a = \frac{633{,}000\ F\ A^{0.82}}{L\ C}\sqrt{\frac{Z\ T}{M}}$$

Where

W = weight of vapors to be relieved in pounds/hour at relieving conditions;
Q_a = air flow in cubic feet per minute at standard conditions (60F and 14.7 psi);
F = fireproofing credit. Use F = 1.0 except when an approved fireproofing material of recommended thickness is used, then use F = 0.2.
A = total surface area in square feet up to 25 feet above grade or to the equator of a sphere, whichever is greater;
Z = compressibility factor of ammonia at relieving conditions (if not known, use Z = 1.0);
T = temperature in degrees R (460 + temperature in degrees F of gas at relieving conditions);
M = molecular weight = 17 for ammonia;
L = latent heat of ammonia at relieving conditions;
C = constant based on relation of specific heats. (C may be obtained from the following table.)

(If K is not known use C = 315.)

K	C	K	C	K	C
1.00	315	1.26	343	1.52	366
1.02	318	1.28	345	1.54	368
1.04	320	1.30	347	1.56	369
1.06	322	1.32	349	1.58	371
1.08	324	1.34	351	1.60	372
1.10	327	1.36	352	1.62	374
1.12	329	1.38	354	1.64	376
1.14	331	1.40	356	1.66	377
1.16	333	1.42	358	1.68	379
1.18	335	1.44	359	1.70	380
1.20	337	1.46	361	2.00	400
1.22	339	1.48	363	2.20	412
1.24	341	1.50	364		

Where $K = C_p/C_v$ at atmospheric conditions and

C_p = specific heat of vapor at constant pressure.
C_v = specific heat of vapor at constant volume.

(c) Shut–off valves of adequate flow capacity may be provided and used to facilitate inspection and repair of safety relief valves. When a shut–off valve is provided it

shall be so arranged that it can be locked or sealed open, and it shall not be closed except by an authorized person who shall remain stationed there while the valve remains closed, and who shall again lock or seal the valve open when leaving the station.

(d) Safety relief devices shall comply with the following:

(i) If stacks are used they shall be suitably designed to prevent obstruction by rain, snow, ice or condensate. The outlet size shall not be smaller than the nominal size of the safety relief valve outlet connection.

(ii) Discharge lines may be used if desired. Multiple safety relief valves on the same storage unit may be run into a common discharge header. The discharge line and header shall be designed to accommodate the maximum flow and a back pressure not exceeding 10% of the design pressure of the storage container. This back pressure shall be included in the 120% total maximum pressure given in WAC 296–24–51013 (5)(a). No other container or system shall exhaust into this discharge line or header. The vent lines shall be installed to prevent accumulation of liquid in the lines.

(e) Atmospheric storage shall be provided with vacuum breakers. Ammonia gas may be used to provide a pad.

(6) Protection of container appurtenances. Refrigerated storage containers shall comply with the provisions of WAC 296–24–51011(7).

(7) Reinstallation of containers. Containers of such size as to require field fabrication shall, when moved and reinstalled, be reconstructed and reinspected in complete accordance with the code under which they were constructed. The containers shall be subjected to a pressure retest, and if rerating is necessary, it shall be done in accordance with the applicable code pressures.

(8) Damage from vehicles. Precaution shall be taken to avoid any damage by trucks, tractors, or other vehicles.

(9) Refrigeration load and equipment.

(a) The total refrigeration load shall be computed as the sum of the following:

(i) Load imposed by heat flow into the container caused by the temperature differential between the ambient temperature and the design storage temperature.

(ii) Load imposed by heat flow into the tank caused by maximum sun radiation.

(iii) Maximum load imposed by filling the tank with ammonia warmer than the design storage temperature.

(b) More than one storage tank may be handled by the same refrigeration system.

(c) Compressors. (See also WAC 296–24–51009 (12)(g).)

(i) A minimum of two compressors shall be provided, either of which if of sufficient size to handle the loads listed in WAC 296–24–51013 (9)(a)(i) and (ii). Where more than two compressors are provided, minimum standby equipment equal to the largest normally operating equipment shall be installed. Compressors required for WAC 296–24–51013 (9)(a)(iii) may be used as standby equipment for compressors required in WAC 296–24–51013 (9)(a)(i) and (ii).

(ii) Compressors shall be sized to operate with a suction pressure at least 10% below the minimum setting of the safety relief valve(s) on the storage tank and shall withstand a suction pressure at least equal to 120% of the design pressure of the tank. Discharge pressure will be governed by condensing conditions.

(d) Compressor drives.

(i) Each compressor shall have its individual driving unit.

(ii) Any standard drive consistent with good design may be used.

(iii) An emergency source of power of sufficient capacity to handle the loads listed in WAC 296–24–51013 (9)(a)(i) and (ii) shall be provided, unless facilities are provided to safely dispose of vented vapors while the refrigeration system is not operating.

(e) Automatic control equipment.

(i) The refrigeration system shall be arranged with suitable controls to govern the compressor operation in accordance with the load as evidenced by the pressure in the container(s).

(ii) An emergency alarm system shall be installed to function in the event the pressure in the container(s) rises to the maximum or falls to the minimum allowable operating pressure.

(iii) An emergency alarm and shut–off shall be located in the condenser system to respond to excess discharge pressure caused by failure of the cooling medium.

(iv) All automatic controls shall be installed in a manner to preclude operation of alternate compressors unless the controls will function with the alternate compressors.

(f) Separators.

(i) An entrainment separator of suitable size and design pressure shall be installed in the compressor suction line. The separator shall be equipped with a drain and gaging device.

(ii) An oil separator of suitable size shall be installed in the compressor discharge line. It shall be designed for at least 250 psig and shall be equipped with a gaging device and drain valve.

(g) Condensers. The condenser system may be cooled by air or water or both. The condenser shall be designed for at least 250 psig. Provision shall be made for purging noncondensibles either manually or automatically.

(h) Receiver and liquid drain. A receiver shall be provided which is equipped with an automatic float valve to discharge the liquid ammonia to storage or with a high pressure liquid drain trap of suitable capacity. The receiver shall be designed for at least 250 psig operating pressure and be equipped with the necessary connections, safety relief valves and gaging device.

(i) Insulation. Refrigerated containers and pipe lines which are insulated shall be covered with a material of suitable quality and thickness for the temperatures encountered. Insulation shall be suitably supported and protected against the weather. Weatherproofing shall be of a type which will not support flame propagation.

(10) Safety equipment. All refrigerated storage plants shall have on hand the minimum safety equipment required under WAC 296–24–51009 (10)(c).

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51013, filed 11/13/80; Order 76-6, § 296-24-51013, filed 3/1/76; Order 73-5, § 296-24-51013, filed 5/9/73 and Order 73-4, § 296-24-51013, filed 5/7/73.]

WAC 296-24-51015 Systems utilizing portable DOT containers. This section applies specifically to systems utilizing cylinders, portable tanks (DOT-51), or "ton containers" (DOT-106A, DOT-110A), constructed in accordance with department of transportation specifications. All basic rules of WAC 296-24-51009 apply to this section, unless otherwise noted.

(1) Containers.

(a) Containers shall comply with department of transportation specifications and shall be maintained, filled, packaged, marked, labeled and shipped to comply with current DOT regulations and American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1. (See Appendix C for availability.)

(b) Containers shall be stored in an area free from ignitable debris and in such manner as to prevent external corrosion. (Storage may be indoors or outdoors.)

(c) Containers shall not be buried below ground.

(d) Containers shall be set upon firm foundations or otherwise firmly secured. The possible effect of settling on the outlet piping shall be guarded against by a flexible connection or special fitting.

(e) Containers shall be protected from heat sources such as radiant flame and steam pipes. Do not apply heat directly to containers to raise the pressure.

(f) Containers shall be stored in such manner as to protect them from moving vehicles or external damage.

(g) Any container which is designed to have a valve protection cap shall have the cap securely in place when the container is not in service.

(2) Container valves and regulating equipment.

(a) Container valves and pressure regulating equipment shall be protected against tampering when installed for use.

(b) Container valves shall be protected while in transit, in storage, and while being moved into final utilizations, as follows:

(i) By setting them into a recess of the container, or

(ii) By ventilated cap or collar, fastened to the container, capable of withstanding a blow from any direction equivalent to that of a 30-lb. weight dropped four feet. Construction must be such that a blow will not be transmitted to the valves or other connections.

(c) When containers are not connected for service, the outlet valves shall be kept tightly closed even though containers are considered empty.

(3) Safety relief devices. Containers shall be provided with safety relief devices as required by department of transportation regulations.

[Order 73-5, § 296-24-51015, filed 5/9/73 and Order 73-4, § 296-24-51015, filed 5/7/73.]

WAC 296-24-51017 Systems mounted on trucks, semi-trailers, and trailers for transportation of ammonia. This section applies specifically to systems mounted on trucks, semi-trailers and trailers (other than those covered under WAC 296-24-51019 and 296-24-51021) used for the transportation of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted. Systems for trucks and trailers for transportation of anhydrous ammonia, in addition to complying with the requirements of these standards, shall also comply where required, with the requirements of the department of transportation and those of any other regulatory body which may apply.

(1) Design pressure of containers.

(a) Containers used in intrastate commerce shall be constructed in accordance with WAC 296-24-51009(2) with a minimum design pressure of 250 psig. Containers used in interstate commerce shall meet DOT regulations.

(b) The shell or head thickness of any container shall not be less than 3/16 inch.

(c) All container openings, except safety relief valves, liquid level gaging devices and pressure gages, shall be labeled to designate whether they communicate with liquid or vapor space. Labels may be on valves.

(d) Baffles are not required for cargo tanks.

(2) Mounting containers on truck.

(a) The means of attachment of any container to the cradle, frame or chassis of a vehicle shall be designed on a basis of two "g" loading in either direction, using a safety factor of not less than 4, based on the ultimate strength of the material used. For purposes of this requirement, two "g" of load support is equivalent to three times the static weight of the articles supported; two "g" of loading and bending, acceleration, and torsion is equivalent to twice the static weight support applied horizontally at the road surface.

(b) "Hold-down" devices, when used, shall anchor the container to the cradle, frame or chassis in a suitable and safe manner that will not introduce undue concentration of stresses. These devices shall incorporate positive means for drawing the container down tight, and suitable stops or anchors shall be provided to prevent relative movement between container and framing due to stopping, starting or changes in direction.

(c) Vehicles designed and constructed so that the cargo tanks constitute in whole or in part the stress member used in lieu of the frame shall be supported by external cradles suspending at least 120° of the shell circumference. The design calculation shall include beam stress, shear stress, torsion stress, bending moment and acceleration stress, in addition to those covered by the code under which the cargo tank was designed.

(d) If a liquid withdrawal line is installed in the bottom of a container, the connections thereto, including hose, shall not be lower than the lowest horizontal edge of the trailer axle.

(e) Provisions shall be made to secure both ends of the hose while in transit.

(f) When the cradle and the container are not welded together, suitable material shall be used between them to eliminate metal-to-metal friction.

(3) Container appurtenances.

(a) Nonrecessed container fittings and appurtenances shall be protected against physical damage by either: (i) A protected location, (ii) the vehicle frame or bumper, or (iii) a protective housing. The protective housing, if used, shall comply with the requirements under which the containers are fabricated with respect to design and construction, and shall be designed to withstand static loadings in any direction equal to twice the weight of the container and attachments when filled with the lading using a safety factor of not less than 4, based on the ultimate strength of the material to be used. The protective housing if used shall be protected with a weather cover, if necessary, to insure proper operation of valves and safety relief devices.

(b) All connections to containers, except filling connections (see WAC 296-24-51017 (3)(c)), safety relief devices, and liquid level and pressure gage connections, shall be provided with suitable automatic excess flow valves, or in lieu thereof, may be fitted with quick-closing internal valves, which shall remain closed except during delivery operations. The control mechanism for such valves may be provided with a secondary control remote from the delivery connections and such control mechanism shall be provided with a fusible section (melting point 208F to 220F) which will permit the internal valve to close automatically in case of fire.

(c) Filling connections shall be provided with automatic back-pressure check valves, excess-flow check valves, or quick-closing internal valves, to prevent back-flow in case the filling connection is broken. Where the filling and discharge connect to a common opening in the container shell and that opening is fitted with a quick-closing internal valve as specified in WAC 296-24-51017 (3)(b), the automatic valve shall not be required.

(d) All containers shall be equipped for spray loading (filling in the vapor space) or with an approved vapor return valve of adequate capacity.

(e) All containers shall be equipped with a fixed maximum liquid level gage.

(f) All containers shall be equipped with a pressure-indicating gage having a dial graduated from 0-400 psig.

(4) Piping and fittings.

(a) All piping, tubing and fittings shall be securely mounted and protected against physical damage.

(b) Piping used on nonrefrigerated systems shall be at least ASTM A-53 Grade B electric resistance welded and electric flash welded pipe or equal. Such pipe shall be at least Schedule 40 when joints are welded, or welded and flanged. Such pipe shall be at least Schedule 80 when joints are threaded. Brass, copper, or galvanized steel pipe or tubing shall not be used.

(c) The truck unloading line shall be provided with an excess flow valve at the hose connection unless an approved quick closing internal valve is provided in the container unloading connection. (See WAC 296-24-51017 (3)(b).)

(5) Safety relief devices. The discharge from container safety relief valves shall be vented away from the container upward and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container; loose fitting rain caps shall be used. Size of discharge lines from safety relief valves shall not be smaller than the nominal size of the safety relief valve outlet connection. Suitable provision shall be made for draining condensate which may accumulate in the discharge pipe.

(6) Marking of container. Every container, whether loaded or empty, shall be conspicuously and legibly marked on each side and rear thereof on a background of sharply contrasting color with the words "COMPRESSED GAS" in letters at least four inches high; or with the words "ANHYDROUS AMMONIA" in letters at least four inches high; or in compliance with department of transportation regulations.

(7) Transfer of liquids.

(a) The content of tank motor vehicle containers shall be determined by weight, by suitable liquid level gaging devices, meters, or other approved methods.

Note: If the content of a container is to be determined by liquid level measurement, the container shall have a thermometer well so that the internal liquid temperature can be easily determined. This volume when converted to weight shall not exceed the filling density specified by the department of transportation regulations.

(b) Pumps or compressors shall be designed and installed in accordance with WAC 296-24-51009(12) and protected against physical damage when mounted upon ammonia tank trucks and trailers.

(c) Tank motor vehicles of greater than 3500 water gallons capacity shall be unloaded only at approved locations meeting the requirements of WAC 296-24-51009 (10)(c) and (12)(h).

(8) Trailers and semi-trailers.

(a) Trailers shall be firmly and securely attached to the vehicle drawing them by means of suitable drawbars, supplemented by suitable safety chain (or chains) or safety cables.

(b) Every trailer and semi-trailer shall be equipped with an emergency braking system to be activated in the event of hitch failure.

(c) Trailers shall be of a type of construction which will prevent the towed vehicle from whipping or swerving dangerously from side to side and which will cause it to follow substantially in the path of the towing vehicle.

(d) Where a fifth wheel is employed on a semi-trailer, it shall be ruggedly designed, securely fastened to both units, and equipped with a positive locking mechanism which will prevent separation of the two units except by manual release.

(e) Every trailer or semi-trailer shall be provided with side lights and a tail light.

(9) Electrical equipment and lighting. Tank trucks, tank trailers, and tank semi-trailers, may not be equipped with any artificial light other than electric light. Electric lighting circuits shall have suitable overcurrent protection (fuses or automatic circuit breakers). The wiring shall have sufficient carrying capacity and mechanical strength, and shall be suitably secured, insulated and protected against physical damage.

(10) Protection against collision. Each tank motor vehicle shall be provided with properly attached bumpers or chassis extensions arranged to protect the tank, piping, valves and fittings from physical damage in case of collision.

(11) Chock blocks. At least two chock blocks shall be provided. These blocks shall be placed to prevent rolling of the vehicle whenever it is parked during loading and unloading operations.

(12) Portable tanks (including skid tanks). When portable tanks are used in lieu of cargo tanks and are permanently mounted on tank motor vehicles for the transportation of ammonia, they shall comply with the requirements of WAC 296-24-51017. Where portable tanks, including those built to DOT Specification 51, 106A or 110A, are used for farm storage they shall comply with WAC 296-24-51011. When portable tanks are used as shipping containers in interstate commerce they shall comply with WAC 296-24-51015.

(13) Safety equipment.

(a) All tank trucks, trailers, and semi-trailers should be equipped with the following for emergency and rescue purposes:

(i) One full face gas mask with anhydrous ammonia refill canisters.

(ii) One pair of protective gloves made of rubber or other material impervious to ammonia.

(iii) Tight-fitting goggles or one full face shield.

(iv) A container of not less than five gallons of readily available clean water.

*An ammonia canister is effective for short periods of time in light concentrations of ammonia vapor, generally 15 minutes in concentrations of 3% and will not protect breathing in heavier concentrations. If ammonia vapors are detected when mask is applied the concentration is too high for safety. The life of a canister in service is controlled by the percentage of vapors to which it is exposed. Canisters must not be opened until ready for use and should be discarded after us. Unopened canisters may be guaranteed for as long as three years. All should be dated when received because of this limited life. In addition to this protection, an independently supplied air mask of the type used by fire departments may be used for severe emergencies.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-51017, filed 11/13/80; Order 76-6, § 296-24-51017, filed 3/1/76; Order 73-5, § 296-24-51017, filed 5/9/73 and Order 73-4, § 296-24-51017, filed 5/7/73.]

WAC 296-24-51019 Systems mounted on farm wagons (implements of husbandry) for the transportation of ammonia. This section applies to containers of 3000 gallons capacity or less and pertinent equipment mounted on farm wagons (implements of husbandry) and used for the transportation of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design of containers. Containers shall be constructed in accordance with WAC 296-24-51009(2).

(2) Mounting containers.

(a) A suitable "stop" or "stops" shall be mounted on the farm wagon or on the container in such a way that the container shall not be dislodged from its mounting due to farm wagon coming to a sudden stop.

(b) A suitable "hold-down" device shall be provided which will anchor the container to the farm wagon at one or more places on each side of the container.

(c) When containers are mounted on four-wheel farm wagons, care shall be taken to insure that the weight is distributed evenly over both axles.

(d) When the cradle and the container are not welded together, suitable material shall be used between them to eliminate metal-to-metal friction.

(3) Container appurtenances.

(a) All containers shall be equipped with a fixed maximum liquid level gage.

(b) All containers with a capacity exceeding 250 gallons shall be equipped with a pressure gage having a dial graduated from 0-400 psi.

(c) The filling connection shall be fitted with combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess flow valve.

(d) All containers with a capacity exceeding 250 gallons shall be equipped for spray loading or with an approved vapor return valve.

(e) All vapor and liquid connections, except safety relief valves and those specifically exempt in WAC 296-24-51009 (6)(e), shall be equipped with approved excess flow valves or may be fitted with quick-closing internal valves which, except during operating periods, shall remain closed.

(f) Fittings shall be protected from physical damage by means of a rigid guard designed to withstand static loading in any direction equal to twice the weight of the container and lading using a safety factor of four based upon the ultimate strength of the material used. If the guard is fully enclosed, the safety relief valves shall be properly vented through the guard.

(g) If a liquid withdrawal line is installed in the bottom of a container, the connections thereto, including hose, shall not be lower than the lowest horizontal edge of the farm wagon axle.

(h) Both ends of the hose shall be made secure while in transit.

(4) Marking of container. There shall appear on each side and on the rear end of the container in letters at least four inches high, the words "ANHYDROUS AMMONIA " or, "CAUTION—AMMONIA" or the container shall be marked in accordance with department of transportation regulations.

(5) Farm wagons (implements of husbandry).

(a) Farm wagons (implements of husbandry) shall conform with state regulations.

(b) All farm wagons shall be securely attached to the vehicle drawing them by means of drawbars supplemented by suitable safety chains.

(c) A farm wagon shall be constructed so that it will follow substantially in the path of the towing vehicle and will prevent the towed farm wagon from whipping or swerving dangerously from side to side.

(d) All farm wagons shall have five gallons or more of readily available clean water.

[Order 73-5, § 296-24-51019, filed 5/9/73 and Order 73-4, § 296-24-51019, filed 5/7/73.]

WAC 296-24-51021 Systems mounted on farm equipment (implements of husbandry) for the application of ammonia. This section applies to systems mounted on farm equipment and used for the field application of ammonia. All basic rules of WAC 296-24-51009 apply to this section unless otherwise noted.

(1) Design of containers. The minimum design for containers shall be in accordance with WAC 296-24-51009(2).

(2) Mounting of containers. All containers shall be securely mounted.

(3) Container valves and appurtenances.

(a) Each container shall have a fixed maximum liquid-level gage.

(b) The filling connection shall be fitted with combination back-pressure check valve and excess-flow valve; one double or two single back-pressure check valves; or a positive shut-off valve in conjunction with either an internal back-pressure check valve or an internal excess-flow valve.

(c) An excess-flow valve is not required in the vapor connection, provided the controlling orifice is not in excess of seven-sixteenths of an inch in diameter and the valve is hand-operated (attached hand wheel or equivalent) shut-off valve. To assist in filling applicator tanks, it is permissible to bleed vapors to the open air, providing the preceding requirements are met.

(d) Metering devices may be connected directly to the tank withdrawal valve. A union type connection is permissible between the tank valve and metering device. Remote mounting of metering devices is permissible using hose which meets with specifications set out in Appendix B. When the applicator tank is trailed and the metering device is remotely mounted, such as on the tractor tool bar, an automatic break-a-way type, self-closing, coupling must be used.

(e) No excess-flow valve is required in the liquid withdrawal line provided the controlling orifice between the contents of the container and the outlet of the shut-off valve (see WAC 296-24-51009 (6)(b)) does not exceed 7/16 inch in diameter.

APPENDIX A

Minimum required rate of discharge in cubic feet per minute of air at 120 percent of the maximum permitted start-to-discharge pressure for safety relief valves to be used on containers other than those constructed in accordance with United States Department of Transportation cylinder specifications.

Surface Area sq. ft.	Flow Rate CFM Air
20	258
25	310
30	360
35	408
40	455
45	501
50	547
55	591
60	635
65	678
70	720
75	762
80	804
85	845
90	885
95	925
100	965
105	1,010
110	1,050
115	1,090
120	1,120
125	1,160
130	1,200
135	1,240
140	1,280
145	1,310
150	1,350
155	1,390
160	1,420
165	1,460
170	1,500
175	1,530
180	1,570
185	1,600
190	1,640
195	1,670
200	1,710
210	1,780
220	1,850
230	1,920
240	1,980
250	2,050
260	2,120
270	2,180
280	2,250
290	2,320
300	2,380
310	2,450
320	2,510
330	2,570
340	2,640
350	2,700
360	2,760
370	2,830
380	2,890
390	2,950
400	3,010
450	3,320
500	3,620
550	3,910

Surface Area sq. ft.	Flow Rate CFM Air
600	4,200
650	4,480
700	4,760
750	5,040
800	5,300
850	5,590
900	5,850
950	6,120
1,000	6,380
1,050	6,640
1,100	6,900
1,150	7,160
1,200	7,410
1,250	7,660
1,300	7,910
1,350	8,160
1,400	8,410
1,450	8,650
1,500	8,900
1,550	9,140
1,600	9,380
1,650	9,620
1,700	9,860
1,750	10,090
1,800	10,330
1,850	10,560
1,900	10,800
1,950	11,030
2,000	11,260
2,050	11,490
2,100	11,720
2,150	11,950
2,200	12,180
2,250	12,400
2,300	12,630
2,350	12,850
2,400	13,080
2,450	13,300
2,500	13,520

Surface area = total outside surface area of container in square feet. When the surface area is not stamped on the name plate or when the marking is not legible, the area can be calculated by using one of the following formulas:

(1) Cylindrical container with hemispherical heads
Area = overall length in feet times outside diameter in feet times 3.1416.

(2) Cylindrical container with other than hemispherical heads
Area = (overall length in feet plus 0.3 outside diameter in feet) times outside diameter in feet times 3.1416.

(3) Spherical container
Area = outside diameter in feet squared times 3.1416.

Flow rate — CFM air = cubic feet per minute of air required at standard conditions, 60F and atmospheric pressure (14.7 psia).

The rate of discharge may be interpolated for intermediate values of surface area. For containers with total outside surface area greater that 2,500 sq. ft., the required flow rate can be calculated using the formula, flow rate CFM air = 22.11 A0.82 where A = outside surface area of the container in square feet.

APPENDIX B

TFI–RMA SPECIFICATION FOR ANHYDROUS AMMONIA HOSE TFI–RMA STANDARD NO. M–5

(1) **Scope.** This specification covers hose and hose assemblies commonly referred to as "pressure transfer hose," used to convey anhydrous ammonia liquid or to convey anhydrous ammonia gas where the gas is in contact with liquid ammonia. This specification primarily covers hose and hose assemblies which have a minimum burst pressure of 1750 psig, a safety factor of 5, and a maximum working pressure of 350 psig. These figures should not be misconstrued to mean that they are the maximum pressures to which anhydrous ammonia hose and hose assemblies are built, since higher pressure hose and hose assemblies are available for special applications.

(2) **Sizes and tolerances.** Anhydrous ammonia hose shall be made with the following dimensions and tolerances:

RUBBER COVERED HOSE FOR USE WITH TWO–PIECE SCREW TYPE COUPLINGS

I.D.	Tolerance	O.D.	Tolerance
1/2"	± 1/32"	15/16"	± 1/32"
3/4"	± 1/32"	1 1/4"	± 1/32"
1 "	± 1/16"	1 1/2"	± 1/16"

NONRUBBER COVERED AND RUBBER COVERED HOSE FOR USE WITH FULL FLOW COUPLINGS

I.D.	Tolerance	O.D.	Tolerance	Nominal Tubing O.D.
13/32"	+.039" – .015"	49/64"	± .031"	1/2"
1/2"	+.047" – .015"	59/64"	± .031"	5/8"
5/8"	+.047" – .015"	1–5/64"	± .031"	3/4"
7/8"	+.047" – .015"	1–15/64"	± .031"	1 "
1 1/8"	+.062" – .015"	1 1/2"	± .047"	1 1/4"
1 3/8"	+.062" – .015"	1 3/4"	± .047"	1 1/2"
1–13/16"	+.062" – .015"	2–7/32"	± .047"	2 "

HOSE FOR USE WITH OTHER TYPES OF COUPLINGS*

I.D.	Tolerance
1/2"	± 1/32"
3/4"	± 1/32"
1 "	± 1/16"
1 1/4"	± 1/16"
1 1/2"	± 1/16"
2 "	± 1/16"

*The O.D. dimension and tolerance were intentionally omitted from this tabulation to provide for developments in both hose and couplings.

(3) **Construction.**

(a) Inner tube. The tube shall be uniform in quality and thickness and free from injurious defects. It shall meet the physical requirements of (4) of Appendix B. The material shall be resistant to hardening or other deterioration due to the action of ammonia.

(b) Reinforcement. The reinforcement shall consist of any material not adversely affected by permeating ammonia. The reinforcement shall be applied evenly and uniformly, and in such a way that it will meet the physical requirements of (4) of Appendix B. In constructions utilizing a ply or plies of wire reinforcement, the composition of the wire shall be a suitable corrosion resistant stainless steel.

(c) Cover. A rubber cover if used shall be uniform in quality and thickness and free from injurious defects. It shall meet the physical requirements of (4) of Appendix B. The cover shall be so compounded or constructed that it will not blister in service, and will be resistant to deterioration due to the action of ammonia. A gas tight cover shall be pricked to relieve pressure build–up between inner tube and cover. The cover shall be resistant to deterioration due to exposure to the elements.

(4) **Physical tests.**

(a) Tension test of tube and cover.

	Tube	Cover
Tensile, psi. min.	800	1200
Elongation, percent, min.	150	200

(b) Adhesion test

	Tube	Ply	Cover
Adhesion lbs./in.	10	8	10

(i) In constructions having braided wire or woven wire filler reinforcing members, only the cover adhesion requirement will apply, as it is impractical to prepare adhesion test specimens except for determining cover adhesion.

(c) Burst test. All sizes have a minimum burst of 1750 psig. (See scope.)

(d) Ammonia performance test. During the conditioning and flexing described in (7)(d) and (7)(d)(ii) of Appendix B there shall be no evidence of cover blistering or leakage. At the conclusion of the conditioning and at the conclusion of the flexing test, the burst must still meet the requirements of (4)(c) of Appendix B. There shall be no evidence of separation of the component parts when the remainder of the samples are examined.

(e) Low temperatures test. The hose shall not fail at minus 40F plus or minus 2°, when tested as described in (7)(e) of Appendix B.

(5) **Types of tests.**

(a) Acceptance inspection. This includes all the test specified, with the exception of the ammonia performance test.

(b) Qualification tests. The qualification tests are intended to establish that the hose is properly designed and constructed to give satisfactory service life. These tests shall be conducted by a recognized independent laboratory. The qualification tests shall consist of all the tests specified herein including the ammonia performance test.

(6) **Method of sampling.**

(a) Acceptance inspection. A 24–inch sample of each size and type hose, representative of the lot, shall be selected from each lot manufactured at one time, or from each 25,000 feet, whichever is smaller.

(b) Qualification test. In addition to the samples specified in (6)(a) of Appendix B, two 12–foot lengths of each size hose shall be selected for the ammonia performance test. Each new hose shall be subjected to a qualification test, and again whenever there has been a design change.

(7) **Methods of testing.**

(a) Tension test of tube and rubber cover. The tension test shall be made in accordance with ASTM D–380.

(b) Friction test. The friction test shall be made in accordance with ASTM D–380.

(c) Burst test. The burst test shall be made in accordance with ASTM D–380 using the method entitled "straight bursting test."

(d) Ammonia performance test. Two 12–foot lengths of hose, to be marked "A" and "B" shall be filled with liquid anhydrous ammonia by connecting to a tank and flushing out with ammonia to remove all the air. One end of each length shall be sealed and the other end left connected to the liquid space of a tank of anhydrous ammonia. The hose shall then be conditioned for 14 days at ambient temperature of 60 to 100F. A valve between the ammonia tank and the hose may be closed providing it is opened at least once each day to completely fill the hose with liquid anhydrous ammonia. The hose shall be examined each day for visible defects. There shall be no evidence of the cover blistering or perceptible leakage. If the hose is valved off at each end when liquid full, a hydrostatic relief valve should be provided between the block valves.

(i) Conditioned hose burst test. A 24–inch sample cut from hose marked "A" shall be subjected to a straight hydrostatic bursting test in accordance with (7)(c) of Appendix B.

(ii) Conditioned hose flexing test.

(A) The 12–foot hose length marked "B" shall be installed in flexing test machine (Fig. 1). One end of the hose is to be connected to the traveling block and the free end passed around two pulleys with diameters as

shown in Table 1. A 30–pound weight shall then be attached to the free end.

(B) From the remainder of hose length marked "A", (sizes 1 inch and under only), cut a section to length indicated in Table 1. Connect one end to the vertically traveling block as shown in Fig. 1 and connect the other end to the liquid space of a tank of anhydrous ammonia. Maintain the temperature of hose and ammonia between 70F and 90F. The test on the feeder hose does not apply to sizes over 1 inch. To conduct the flex test on the larger sizes any convenient hose may be used as a feeder hose.

(C) The flexing test shall continue for 72 hours at a rate of approximately 470 cycles per hour with a 42–inch vertical movement of the traveling block. A valve between the ammonia tank and the hose may be closed providing it is opened at least once each day to pressurize the hose. The hose shall be examined each day for visible defect. There shall be no evidence of cover blistering or leakage.

(D) At the conclusion of the flexing period, cut a 24–inch sample from hose "A" and from hose "B" and subject each sample to a straight burst test in accordance with (7)(c) of Appendix B. All samples shall have a minimum burst of 1750 psig.

TABLE 1

Hose Size	Pulley Diameter	Feeder Hose Length
1/2"	14" ± 1/4"	36"
3/4"	14" ± 1/4"	36"
1 "	14" ± 1/4"	36"
1 1/4"	15" ± 1/4"	
1 1/2"	18" ± 1/4"	
2 "	24" ± 1/4"	

(E) Low temperature test. A straight piece of hose at least 24 inches long, conditioned to minus 40F plus or minus 2F for 5 hours, and bent 180° within two seconds around a mandrel 12 times the nominal inside diameter of the hose, shall not break or show cracks in the tube or cover.

(8) **Retests and rejections.** Any hose which fails in one or more tests may be resampled and retested, for which purpose two additional samples shall be selected from the hose for the test that failed to meet the requirements. Failure of either of the retested samples shall be cause for final rejection.

(9) **Hose assemblies.** The couplings must be so designed and constructed, that an assembly shall have sufficient strength that it will reach the minimum burst pressure, as required by (4)(c) of Appendix B, before the end fittings leak or come off when pressure is applied as specified in ASTM D–380 for hydrostatic tests. Fittings must be resistant to the action of anhydrous and aqueous ammonia and in no case may assemblies be supplied with copper alloy fittings.

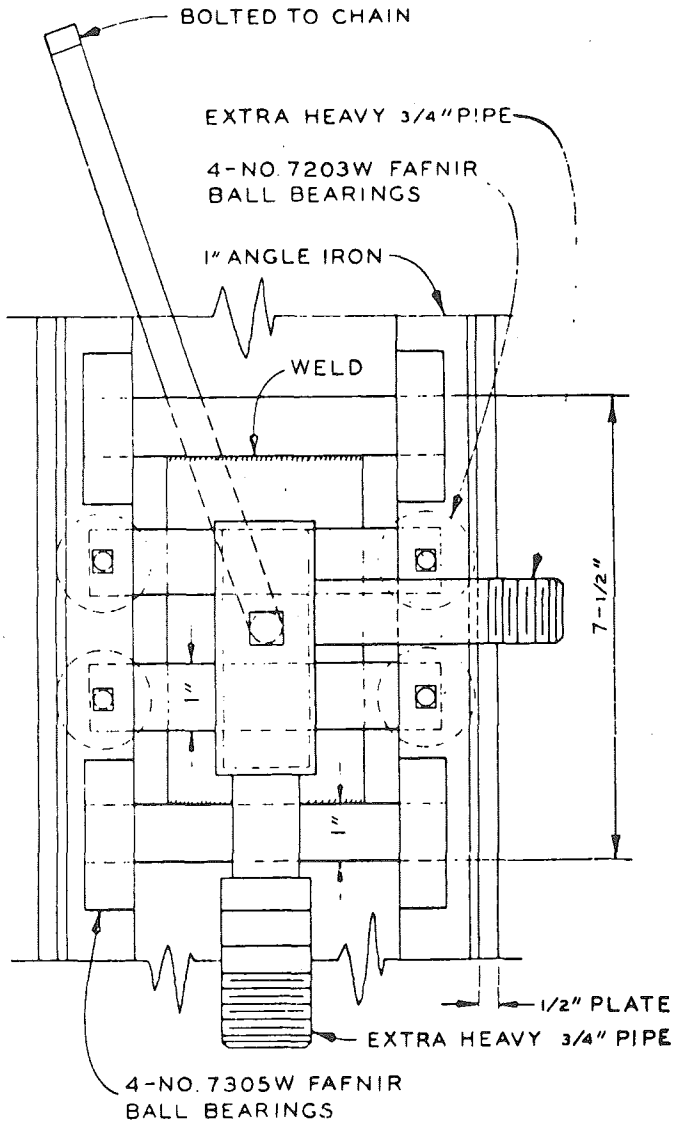
(10) **Markings.** Hose shall be clearly marked at least once every five feet with manufacturer's name or trademark, "anhydrous ammonia," the maximum working pressure in psig, year of manufacturer, and "TFI–RMA Spec.," for all hose manufactured after January 1, 1964. As indicated in the scope, the maximum working pressure must not be less than 350 psig.

(11) **Packaging.**

(a) Packing. Unless otherwise specified, hose shall be packed in substantial commercial containers of the type, size and kind commonly used for the purpose, so constructed as to insure acceptance and safe delivery to common or other carriers, at the lowest rate, to the point of delivery specified on the order.

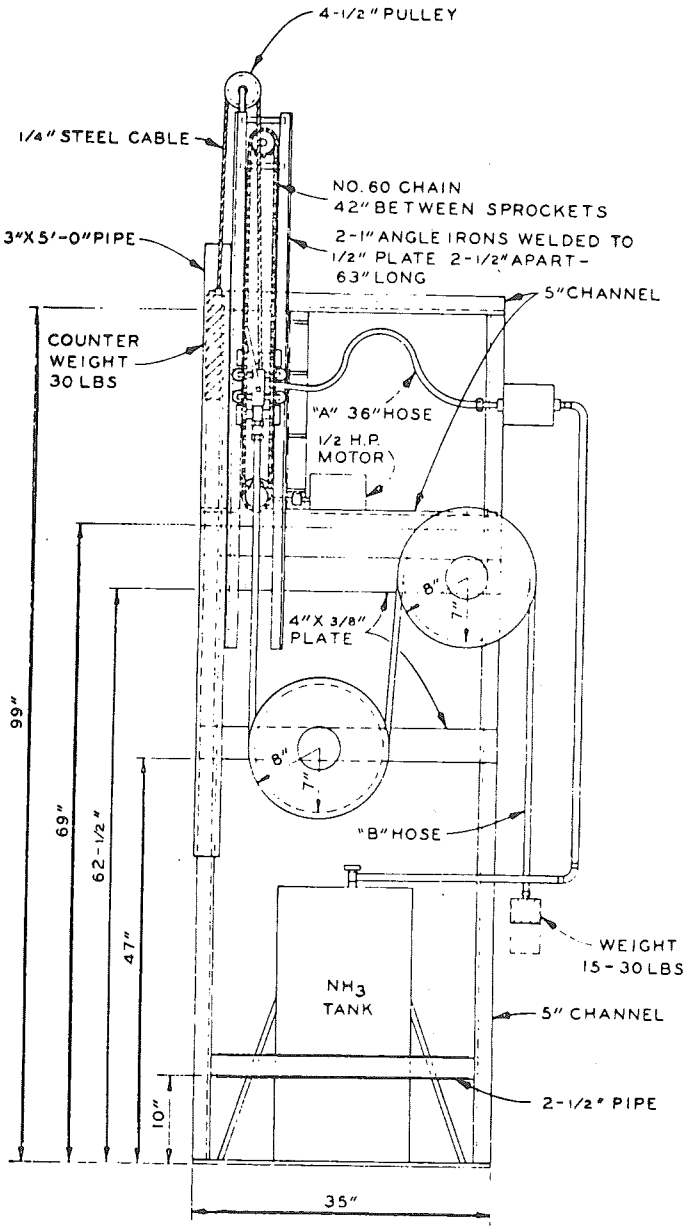
(b) Identification. Unless otherwise specified, shipping containers shall be marked with the size and quantity of hose therein, the name of the manufacturer, and the number of the order.

Figure 1



Note: 1/2 H.P. electric motor–1750 RPM 20:1 gear reduction unit sprockets–14 teeth.

TROLLEY



TYPICAL HOSE FLEXING MACHINE

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–17–015 (Order 80–21), § 296–24–51021, filed 11/13/80; Order 73–5, § 296–24–51021, filed 5/9/73 and Order 73–4, § 296–24–51021, filed 5/7/73.]

WAC 296-24-51099 Appendix C--Availability of reference material.

APPENDIX C

AVAILABILITY OF REFERENCE MATERIAL

American National Standards Institute, Inc. (ANSI) [formerly United States of America Standards Institute (USASI) formerly American Standards Association (ASA)]
1430 Broadway
New York, New York 10018

American Petroleum Institute (API)
1801 "K" Street, N.W.
Washington, D.C. 20006

American Society of Mechanical Engineers (ASME)
345 East 47th Street
New York, New York 10017

American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, Pennsylvania 19103

Bureau of Explosives*
1920 "L" Street, N.W.
Washington, D.C. 20036

Compressed Gas Association, Incorporated (CGA)
500 Fifth Avenue
New York, New York 10036

The Fertilizer Institute (TFI) (formerly Agricultural Nitrogen Institute——National Plant Food Institute)
1015 – 18th Street N.W.
Washington, D.C. 20036

Manufacturing Chemists' Association (MCA) Universal Building
1825 Connecticut Ave., N.W.
Washington, D.C. 20009

National Fire Protection Association (NFPA)
60 Batterymarch Street
Boston, Massachusetts 02110

Bureau of Mines U.S. Department of the Interior
4800 Forbes Avenue
Pittsburgh, Pennsylvania 15213

Superintendent of Documents*
U.S. Government Printing Office
Washington, D.C. 20402

*DOT regulations available at nominal cost.

[Order 76–6, § 296–24–51099, filed 3/1/76.]

Part G

MEANS OF EGRESS, FIRE PROTECTION AND FIRE SUPPRESSION EQUIPMENT

WAC

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296–24–55003 General requirements.
296–24–55005 Fundamental requirements.
296–24–55007 Protection of employees exposed by construction and repair operations.
296–24–55009 Maintenance.
296–24–565 Means of egress, general.
296–24–56501 Permissible exit components.
296–24–56503 Protective enclosure of exits.
296–24–56505 Width and capacity of means of egress.
296–24–56507 Egress capacity and occupant load.
296–24–56509 Arrangement of exits.
296–24–56511 Access to exits.
296–24–56513 Exterior ways of exit access.
296–24–56515 Discharge from exits.
296–24–56517 Headroom.

296-24-56519 Changes in elevation.
296-24-56521 Maintenance and workmanship.
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296-24-56527 Fire alarm signaling systems.
296-24-56529 Fire retardant paints.
296-24-56531 Exit marking.
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296-24-56701 Appendix.
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296-24-58507 Organization.
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296-24-58511 Fire fighting equipment.
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296-24-58517 Appendix A—Fire brigades.
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296-24-59003 Selection of extinguishers.
296-24-59005 Distribution of portable fire extinguishers.
296-24-59007 Inspection, maintenance, and hydrostatic tests.
296-24-592 Portable fire extinguishers.
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296-24-59211 Hydrostatic testing.
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296-24-600 Standpipe and hose systems.
296-24-60001 General requirements.
296-24-60003 Hose outlets.
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296-24-602 Standpipe and hose systems.
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296-24-61799 Appendix A—Fixed extinguishing systems, general.
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296-24-622 Fixed extinguishing systems, dry chemical.
296-24-62201 Scope and application.
296-24-62203 Specific requirements.
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296-24-623 Fixed extinguishing systems, gaseous agent.
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296-24-62399 Appendix A—Fixed extinguishing systems, gaseous agent.
296-24-625 Local fire alarm signaling systems.
296-24-627 Fixed extinguishing systems, water spray and foam.
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296-24-631 Employee alarm systems.
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296-24-63109 Manual operation.
296-24-63199 Appendix A—Employee alarm systems.
296-24-63299 Appendix B—National consensus standards.
296-24-63399 Appendix C—Fire protection references for further information.
296-24-63499 Appendix D—Availability of publications incorporated by references in WAC 296-24-58505—Fire brigades.
296-24-63599 Appendix E—Test methods for protective clothing.

WAC 296-24-550 Means of egress.

[Order 73-5, § 296-24-550, filed 5/9/73 and Order 73-4, § 296-24-550, filed 5/7/73.]

WAC 296-24-55001 Definitions. (1) Means of egress. A means of egress is a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consists of three separate and distinct parts: The way of exit access, the exit, and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts, and yards.

(2) Exit access. Exit access is that portion of a means of egress which leads to an entrance to an exit.

(3) Exit. Exit is that portion of a means of egress which is separated from all other spaces of the building or structure by construction or equipment as required in these standards to provide a protected way of travel to the exit of discharge.

(4) Exit discharge. Exit discharge is that portion of a means of egress between the termination of an exit and a public way.

(5) Low hazard contents. Low hazard contents shall be classified as those of such low combustibility that no self-propagating fire therein can occur and that consequently the only probable danger requiring the use of emergency exits will be from panic, fumes, or smoke, or fire from some external source.

(6) High-hazard contents. High-hazard contents shall be classified as those which are liable to burn with

extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

(7) Ordinary hazard contents. Ordinary hazard contents shall be classified as those which are liable to burn with moderate rapidity and to give off a considerable volume of smoke but from which neither poisonous fumes nor explosions are to be feared in case of fire.

(8) Approved. For the purposes of these standards approved shall mean listed or approved equipment by a nationally recognized testing laboratory.

(9) Emergency action plan. A plan for a workplace, or parts thereof, describing what procedures the employer and employees must take to ensure employee safety from fire or other emergencies.

(10) Emergency escape route. The route that employees are directed to follow in the event they are required to evacuate the workplace or seek a designated refuge area.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-55001, filed 12/24/81; Order 73-5, § 296-24-55001, filed 5/9/73 and Order 73-4, § 296-24-55001, filed 5/7/73.]

WAC 296-24-55003 General requirements. (1) Application. WAC 296-24-550 through 296-24-55005 contain general fundamental requirements essential to providing a safe means of egress from fire and like emergencies. Nothing in these standards shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in these standards. Exits from vehicles, vessels, or other mobile structures are not covered by these standards.

[Order 73-5, § 296-24-55003, filed 5/9/73 and Order 73-4, § 296-24-55003, filed 5/7/73.]

WAC 296-24-55005 Fundamental requirements. (1) Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards shall be such that reliance for safety to life in case of fire or other emergency will not depend solely on any single safeguard; additional safeguards shall be provided for life safety in case any single safeguard is ineffective due to some human or mechanical failure.

(2) Every building or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure in case of fire or other emergency.

(3) Every building or structure shall be provided with exits of kinds, numbers, location, and capacity appropriate to the individual building or structure, with due regard to the character of the occupancy, the number of persons exposed, the fire protection available, and the height and type of construction of the building or structure, to afford all occupants convenient facilities for escape.

(4) In every building or structure exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening to prevent free escape from the inside of any building shall be installed except in mental, penal, or corrective institutions where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

(5) Every exit shall be clearly visible or the route to reach it shall be conspicuously indicated in such a manner that every occupant of every building or structure who is physically and mentally capable will readily know the direction of escape from any point, and each path of escape, in its entirety, shall be so arranged or marked that the way to a place of safety outside is unmistakable. Any doorway or passageway not constituting an exit or way to reach an exit, but of such a character as to be subject to being mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit and the resultant danger of persons endeavoring to escape from fire finding themselves trapped in a dead-end space, such as a cellar or storeroom, from which there is no other way out.

(6) In every building or structure equipped for artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

(7) In every building or structure of such size, arrangement, or occupancy that a fire may not itself provide adequate warning to occupants, fire alarm facilities shall be provided where necessary to warn occupants of the existence of fire so that they may escape, or to facilitate the orderly conduct of fire exit drills.

(8) Every building or structure, section, or area thereof of such size, occupancy, and arrangement that the reasonable safety of numbers of occupants may be endangered by the blocking of any single means of egress due to fire or smoke, shall have at least two means of egress remote from each other, so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency conditions.

(9) Compliance with WAC 296-24-550 through 296-24-55005 shall not be construed as eliminating or reducing the necessity for other provisions for safety of persons using a structure under normal occupancy conditions, nor shall any provision of these standards be construed as requiring or permitting any condition that may be hazardous under normal occupancy conditions.

(10) Freezer rooms or refrigerated rooms. The opening device on all doors of walk-in refrigerated or freezer rooms must be the type, when locked from the outside with a lock, can be opened from inside.

[Order 74-27, § 296-24-55005, filed 5/7/74; Order 73-5, § 296-24-55005, filed 5/9/73 and Order 73-4, § 296-24-55005, filed 5/7/73.]

WAC 296-24-55007 Protection of employees exposed by construction and repair operations. (1) No building or structure under construction shall be occupied in whole or in part until all exit facilities required for the part occupied are completed and ready for use.

(2) No existing building shall be occupied during repairs or alterations unless all existing exits and any existing fire protection are continuously maintained, or in lieu thereof other measures are taken which provide equivalent safety.

(3) No flammable or explosive substances or equipment for repairs or alterations shall be introduced in a building of normally low or ordinary hazard classification while the building is occupied, unless the condition of use and safeguards provided are such as not to create any additional danger or handicap to egress beyond the normally permissible conditions in the building.

[Order 73-5, § 296-24-55007, filed 5/9/73 and Order 73-4, § 296-24-55007, filed 5/7/73.]

WAC 296-24-55009 Maintenance. (1) Every required exit, way of approach thereto, and way of travel from the exit into the street or open space, shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

(2) Every automatic sprinkler system, fire detection and alarm system, exit lighting, fire door, and other item of equipment, where provided, shall be continuously in proper operating condition.

[Order 73-5, § 296-24-55009, filed 5/9/73 and Order 73-4, § 296-24-55009, filed 5/7/73.]

WAC 296-24-565 Means of egress, general.

[Order 73-5, § 296-24-565, filed 5/9/73 and Order 73-4, § 296-24-565, filed 5/7/73.]

WAC 296-24-56501 Permissible exit components. An exit shall consist only of the approved components. Exit components shall be constructed as an integral part of the building or shall be permanently affixed thereto.

[Order 73-5, § 296-24-56501, filed 5/9/73 and Order 73-4, § 296-24-56501, filed 5/7/73.]

WAC 296-24-56503 Protective enclosure of exits. When an exit is protected by separation from other parts of the building the separating construction shall meet the following requirements.

(1) The separation shall have at least a 1-hour fire resistance rating when the exit connects three stories or less. This applies whether the stories connected are above or below the story at which exit discharge begins.

(2) The separation shall have at least a 2-hour fire resistance rating when the exit connects four or more stories, whether above or below the floor of discharge. It shall be constructed of noncombustible materials, and shall be supported by construction having at least a 2-hour fire resistance rating.

(3) Any opening therein shall be protected by an approved self-closing fire door.

(4) Openings in exit enclosures shall be confined to those necessary for access to the enclosure from normally occupied spaces and for egress from the enclosure.

[Order 73-5, § 296-24-56503, filed 5/9/73 and Order 73-4, § 296-24-56503, filed 5/7/73.]

WAC 296-24-56505 Width and capacity of means of egress. (1) The capacity in number of persons per unit of exit width for approved components of means of egress shall be as follows:

(a) Level egress components (including Class A ramps) 100 persons.

(b) Inclined egress components (including Class B ramps) 60 persons.

(c) A ramp shall be designated as Class A or Class B in accordance with the following Table E-1:

TABLE E-1

	Class A	Class B
Width	44 inches and greater.	30 to 44 inches.
Slope	1 to 1 3/16 inches in 12 inches.	1 3/16 to 2 inches in 12 inches.
Maximum height between landings	No limit.	12 feet.

(2) Means of egress shall be measured in units of exit width of 22 inches. Fractions of a unit shall not be counted, except that 12 inches added to one or more full units shall be counted as one-half a unit of exit width.

(3) Units of exit width shall be measured in the clear at the narrowest point of the means of egress except that a handrail may project inside the measured width on each side not more than 5 inches and a stringer may project inside the measured width not more than 1 1/2 inches. An exit or exit access door swinging into an aisle or passageway shall not restrict the effective width thereof at any point during its swing to less than the minimum widths hereafter specified.

[Order 73-5, § 296-24-56505, filed 5/9/73 and Order 73-4, § 296-24-56505, filed 5/7/73.]

WAC 296-24-56507 Egress capacity and occupant load. (1) The capacity of means of egress for any floor, balcony, tier, or other occupied space shall be sufficient for the occupant load thereof. The occupant load shall be the maximum number of persons that may be in the space at any time.

(2) Where exits serve more than one floor, only the occupant load of each floor considered individually need be used in computing the capacity of the exits at that floor, provided that exit capacity shall not be decreased in the direction of exit travel.

[Order 73-5, § 296-24-56507, filed 5/9/73 and Order 73-4, § 296-24-56507, filed 5/7/73.]

WAC 296-24-56509 Arrangement of exits. When more than one exit is required from a story, at least two of the exits shall be remote from each other and so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency condition.

[Order 73-5, § 296-24-56509, filed 5/9/73 and Order 73-4, § 296-24-56509, filed 5/7/73.]

WAC 296-24-56511 Access to exits. (1) Exits shall be so located and exit access shall be so arranged that exits are readily accessible at all times. Where exits are not immediately accessible from an open floor area, safe and continuous passageways, aisles, or corridors leading directly to every exit and so arranged as to provide convenient access for each occupant to at least two exits by separate ways of travel, except as a single exit or limited dead ends are permitted by other provisions of these standards shall be maintained.

(2) A door from a room to an exit or to a way of exit access shall be of the side-hinged, swinging type. It shall swing with exit travel when the room is occupied by more than 50 persons or used for a high hazard occupancy.

(3) In no case shall access to an exit be through a bathroom, or other room subject to locking, except where the exit is required to service only the room subject to locking.

(4) Ways of exit access and the doors to exits to which they lead shall be so designed and arranged as to be clearly recognizable as such. Hangings or draperies shall not be placed over exit doors or otherwise so located as to conceal or obscure any exit. Mirrors shall not be placed on exit doors. Mirrors shall not be placed in or adjacent to any exit in such a manner as to confuse the direction of exit.

(5) Exit access shall be so arranged that it will not be necessary to travel toward any area of high hazard occupancy in order to reach the nearest exit, unless the path of travel is effectively shielded from the high hazard location by suitable partitions or other physical barriers.

(6) The minimum width of any way of exit access shall in no case be less than 28 inches. Where a single way of exit access leads to an exit, its capacity in terms of width shall be at least equal to the required capacity of the exit to which it leads. Where more than one way of exit access leads to an exit, each shall have a width adequate for the number of persons it must accommodate.

[Order 73-5, § 296-24-56511, filed 5/9/73 and Order 73-4, § 296-24-56511, filed 5/7/73.]

WAC 296-24-56513 Exterior ways of exit access. (1) Access to an exit may be by means of any exterior balcony, porch, gallery, or roof that conforms to the requirements of this section.

(2) Exterior ways of exit access shall have smooth, solid floors, substantially level, and shall have guards on the unenclosed sides.

(3) Where accumulation of snow or ice is likely because of the climate, the exterior way of exit access shall be protected by a roof, unless it serves as the sole normal means of access to the rooms or spaces served, in which case it may be assumed that snow and ice will be regularly removed in the course of normal occupancy.

(4) A permanent, reasonably straight path of travel shall be maintained over the required exterior way of exit access. There shall be no obstruction by railings, barriers, or gates that divide the open space into sections appurtenant to individual rooms, apartments, or other uses. Where the director or his duly authorized representative finds the required path of travel to be obstructed by furniture or other movable objects, he may require that they be fastened out of the way or he may require that railings or other permanent barriers by installed to protect the path of travel against encroachment.

(5) An exterior way of exit access shall be so arranged that there are no dead ends in excess of 20 feet. Any unenclosed exit served by an exterior way of exit access shall be so located that no part of the exit extends past a vertical plane 20 feet and one-half the required width of the exit from the end of and at right angles to the way of exit access.

(6) Any gallery, balcony, bridge, porch or other exterior exit access that projects beyond the outside wall of the building shall comply with the requirements of this section as to width and arrangement.

[Order 73-5, § 296-24-56513, filed 5/9/73 and Order 73-4, § 296-24-56513, filed 5/7/73.]

WAC 296-24-56515 Discharge from exits. (1) All exits shall discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way. The streets to which the exits discharge shall be of width adequate to accommodate all persons leaving the building. Yards, courts, or other open spaces to which exits discharge shall also be of adequate width and size to provide all persons leaving the building with ready access to the street.

(2) Stairs and other exits shall be so arranged as to make clear the direction of egress to the street. Exit stairs that continue beyond the floor of discharge shall be interrupted at the floor of discharge by partitions, doors, or other effective means.

(3) Where a doorway or corner of a building is located near a railroad or trolley track so that a workman is liable to walk upon the track in front of an approaching engine or cars a standard safeguard shall be installed with a warning sign.

[Order 73-5, § 296-24-56515, filed 5/9/73 and Order 73-4, § 296-24-56515, filed 5/7/73.]

WAC 296-24-56517 Headroom. Means of egress shall be so designed and maintained as to provide adequate headroom, but in no case shall the ceiling height be less than 7 feet 6 inches nor any projection from the ceiling be less than 6 feet 8 inches from the floor.

[Order 73-5, § 296-24-56517, filed 5/9/73 and Order 73-4, § 296-24-56517, filed 5/7/73.]

WAC 296-24-56519 Changes in elevation. Where a means of egress is not substantially level, such differences in elevation shall be negotiated by stairs or ramps.

[Order 73-5, § 296-24-56519, filed 5/9/73 and Order 73-4, § 296-24-56519, filed 5/7/73.]

WAC 296-24-56521 Maintenance and workmanship. (1) Doors, stairs, ramps, passages, signs, and all

other components of means of egress shall be of substantial, reliable construction and shall be built or installed in a workmanlike manner.

(2) Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in the case of fire or other emergency.

(3) Any device or alarm installed to restrict the improper use of an exit shall be so designed and installed that it cannot, even in cases of failure, impede or prevent emergency use of such exit.

[Order 73-5, § 296-24-56521, filed 5/9/73 and Order 73-4, § 296-24-56521, filed 5/7/73.]

WAC 296-24-56523 Furnishings and decorations. (1) No furnishings, decorations, or other objects shall be so place as to obstruct exits, access thereto, egress therefrom, or visibility thereof.

(2) No furnishings or decorations of an explosive or highly flammable character shall be used in any occupancy.

[Order 73-5, § 296-24-56523, filed 5/9/73 and Order 73-4, § 296-24-56523, filed 5/7/73.]

WAC 296-24-56525 Automatic sprinkler systems. All automatic sprinkler systems shall be continuously maintained in reliable operating condition at all times, and such periodic inspections and tests shall be made as are necessary to assure proper maintenance.

[Order 73-5, § 296-24-56525, filed 5/9/73 and Order 73-4, § 296-24-56525, filed 5/7/73.]

WAC 296-24-56527 Fire alarm signaling systems. The employer shall assure that fire alarm signaling systems are maintained and tested in accordance with the requirements of WAC 296-24-63107.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-56527, filed 12/24/81; Order 73-5, § 296-24-56527, filed 5/9/73 and Order 73-4, § 296-24-56527, filed 5/7/73.]

WAC 296-24-56529 Fire retardant paints. Fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary flame retardant properties.

[Order 73-5, § 296-24-56529, filed 5/9/73 and Order 73-4, § 296-24-56529, filed 5/7/73.]

WAC 296-24-56531 Exit marking. (1) Exits shall be marked by a readily visible sign. Access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants.

(2) Any door, passage, or stairway which is neither an exit nor a way of exit access, and which is so located or arranged as to be likely to be mistaken for an exit, shall be identified by a sign reading "not an exit" or similar designation, or shall be identified by a sign indicating its actual character, such as "to basement," "storeroom," "linen closet," or the like.

(3) Every required sign designating an exit or way of exit access shall be so located and of such size, color, and design as to be readily visible. No decorations, furnishings, or equipment which impair visibility of an exit sign shall be permitted, nor shall there be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision to the required exit sign of such a character as to so detract attention from the exit sign that it may not be noticed.

(4) Every exit sign shall be distinctive in color and shall provide contrast with decorations, interior finish, or other signs.

(5) A sign reading "exit," or similar designation, with an arrow indicating the direction, shall be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent.

(6) Every exit sign shall be suitably illuminated by a reliable light source giving a value of not less than 5-foot candles on the illuminated surface. Artificial lights giving illumination to exit signs other than the internally illuminated types shall have screens, discs, or lenses of not less than 25 square inches area made of translucent material to show red or other specified designating color on the side of the approach.

(7) Each internally illuminated exit sign shall be provided in all occupancies where reduction of normal illumination is permitted.

(8) Every exit sign shall have the word "exit" in plainly legible letters not less than 6 inches high, with the principal strokes of letters not less than three-fourths-inch wide.

[Order 73-5, § 296-24-56531, filed 5/9/73 and Order 73-4, § 296-24-56531, filed 5/7/73.]

WAC 296-24-567 Employee emergency plans and fire prevention plans. (1) Emergency action plan.

(a) Scope and application. This subdivision applies to all emergency action plans required by a particular WISHA standard. The emergency action plan shall be in writing (except as provided in the last sentence of (1)(e)(iii) of this section) and shall cover those designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

(b) Elements. The following elements, at a minimum, shall be included in the plan:

(i) Emergency escape procedures and emergency escape route assignments;

(ii) Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;

(iii) Procedures to account for all employees after emergency evacuation has been completed;

(iv) Rescue and medical duties for those employees who are to perform them;

(v) The preferred means of reporting fires and other emergencies; and

(vi) Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan.

(c) Alarm systems.

(i) The employer shall establish an employee alarm system which complies with WAC 296-24-631.

(ii) If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.

(d) Evacuation. The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.

(e) Training.

(i) Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.

(ii) The employer shall review the plan with each employee covered by the plan at the following times:

(A) Initially when the plan is developed;

(B) Whenever the employee's responsibilities or designated actions under the plan change; and

(C) Whenever the plan is changed.

(iii) The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review. For those employers with ten or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

(2) Fire prevention plan.

(a) Scope and application. This subsection applies to all fire prevention plans required by a particular WISHA standard. The fire prevention plan shall be in writing, except as provided in the last sentence of (2)(d)(ii) of this section.

(b) Elements. The following elements, at a minimum, shall be included in the fire prevention plan:

(i) A list of the major workplace fire hazards and their proper handling and storage procedures, potential ignition sources (such as welding, smoking and others) and their control procedures, and the type of fire protection equipment or systems which can control a fire involving them;

(ii) Names or regular job titles of those personnel responsible for maintenance of equipment and systems installed to prevent or control ignitions or fires; and

(iii) Names or regular job titles of those personnel responsible for control of fuel source hazards.

(c) Housekeeping. The employer shall control accumulations of flammable and combustible waste materials and residues so that they do not contribute to a fire emergency. The housekeeping procedures shall be included in the written fire prevention plan.

(d) Training.

(i) The employer shall apprise employees of the fire hazards of the materials and processes to which they are exposed.

(ii) The employer shall review with each employee upon initial assignment those parts of the fire prevention plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept in the workplace and made available for employee review. For those employers with ten or few employees, the plan may be communicated orally to employees and the employer need not maintain a written plan.

(e) Maintenance. The employer shall regularly and properly maintain, according to established procedures, equipment and systems installed on heat producing equipment to prevent accidental ignition of combustible materials. The maintenance procedures shall be included in the written fire prevention plan.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-567, filed 12/24/81.]

WAC 296-24-56701 Appendix. This appendix serves as a nonmandatory guideline to assist employers in complying with the appropriate requirements.

(1) Employee emergency plans. Emergency action plan elements. The emergency action plan should address emergencies that the employer may reasonably expect in the workplace. Examples are: Fire, toxic chemical releases; hurricanes; tornadoes; blizzards; floods; and others. The elements of the emergency action plan presented in WAC 296-24-567 (1)(b) can be supplemented by the following to more effectively achieve employee safety and health in an emergency. The employer should list in detail the procedures to be taken by those employees who have been selected to remain behind to care for essential plant operations until their evacuations become absolutely necessary. Essential plant operations may include the monitoring of plant power supplies, water supplies, and other essential services which cannot be shut down for every emergency alarm. Essential plant operations may also include chemical or manufacturing processes which must be shut down in stages or steps where certain employees must be present to assure that safe shut down procedures are completed.

The use of floor plans or workplace maps which clearly show the emergency escape routes should be included in the emergency action plan. Color coding will aid employees in determining their route assignments.

The employer should also develop and explain in detail what rescue and medical first aid duties are to be performed and by whom. All employees are to be told what actions they are to take in these emergency situations that the employer anticipates may occur in the workplace.

(2) Emergency evacuation. At the time of an emergency, employees should know what type of evacuation is necessary and what their role is in carrying out the plan. In some cases where the emergency is very grave, total and immediate evacuation of all employees is necessary. In other emergencies, a partial evacuation of nonessential employees with a delayed evacuation of others may be necessary for continued plant operation. In some cases, only those employees in the immediate area of the fire may be expected to evacuate or move to a safe area such as when a local application fire suppression system discharge employee alarm is sounded. Employees must be sure that they know what is expected of them in all such emergency possibilities which have been planned in order to provide assurance of their safety from fire or other emergency.

The designation of refuge or safe areas for evacuation should be determined and identified in the plan. In a building divided into fire zones by fire walls, the refuge area may still be within the same building but in a different zone from where the emergency occurs.

Exterior refuge or safe areas may include parking lots, open fields or streets which are located away from the site of the emergency and which provide sufficient space to accommodate the employees. Employees should be instructed to move away from the exit discharge doors of the building, and to avoid congregating close to the building where they may hamper emergency operations.

(3) Emergency action plan training. The employer should assure that an adequate number of employees are available at all times during working hours to act as evacuation wardens so that employees can be swiftly moved from the danger location to the safe areas. Generally, one warden for each twenty employees in the workplace should be able to provide adequate guidance and instruction at the time of a fire emergency. The employees selected or who volunteer to serve as wardens should be trained in the complete workplace layout and the various alternative escape routes from the workplace. All wardens and fellow employees should be made aware of handicapped employees who may need extra assistance, such as using the buddy system, and of hazardous areas to be avoided during emergencies. Before leaving, wardens should check rooms and other enclosed spaces in the workplace for employees who may be trapped or otherwise unable to evacuate the area.

After the desired degree of evacuation is completed, the wardens should be able to account for or otherwise verify that all employees are in the safe areas.

In buildings with several places of employment, employers are encouraged to coordinate their plans with the other employers in the building. A building-wide or standardized plan for the whole building is acceptable provided that the employers inform their respective employees of their duties and responsibilities under the plan. The standardized plan need not be kept by each employer in the multi-employer building provided there is an accessible location within the building where the plan can be reviewed by affected employees. When multi-employer, building-wide plans are not feasible, employers should coordinate their plans with the other employers within the building to assure that conflicts and confusion are avoided during time of emergencies. In multistory buildings where more than one employer is on a single floor, it is essential that these employers coordinate their plans with each other to avoid conflicts and confusion.

(4) Fire prevention housekeeping. The standard calls for the control of accumulations of flammable and combustible waste materials.

It is the intent of this standard to assure that hazardous accumulations of combustible waste materials are controlled so that a fast developing fire, rapid spread of toxic smoke, or an explosion will not occur. This does not necessarily mean that each room has to be swept each day. Employers and employees should be aware of the hazardous properties of materials in their workplaces, and the degree of hazard each poses. Certainly, oil soaked rags have to be treated differently than general paper trash in office areas. However, large accumulations of waste paper or corrugated boxes, etc., can pose a significant fire hazard. Accumulations of materials which can cause large fires or generate dense smoke that are easily ignited or may start from spontaneous combustion, are the types of materials with which this standard is concerned. Such combustible materials may be easily ignited by matches, welder's sparks, cigarettes, and similar low level energy ignition sources.

(5) Maintenance of equipment under the fire prevention plan. Certain equipment is often installed in workplaces to control heat sources or to detect fuel leaks. An example is a temperature limit switch often found on deep-fat food fryers found in restaurants. There may be similar switches for high temperature dip tanks, or flame failure and flashback arrester devices on furnaces and similar heat producing equipment. If these devices are not properly maintained or if they become inoperative, a definite fire hazard exists. Again employees and supervisors should be aware of the specific type of control devices on equipment involved with combustible materials in the workplace and should make sure, through periodic inspection or testing, that these controls are operable. Manufacturers' recommendations should be followed to assure proper maintenance procedures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-56701, filed 12/24/81.]

WAC 296-24-585 Fire protection.

[Order 73-5, § 296-24-585, filed 5/9/73 and Order 73-4, § 296-24-585, filed 5/7/73.]

WAC 296-24-58501 Definitions applicable to fire protection. (1) "Class A fires" are fires in ordinary combustible materials, such as wood, cloth, paper, and rubber.

(2) "Class B fires" are fires in flammable liquids, gases, and greases.

(3) "Class C fires" are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is deenergized, extinguisher for Class A or B fires may be used safely.)

(4) "Class D fires" are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

(5) Classification of portable fire extinguishers: "Portable fire extinguishers" are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70°F by nationally recognized testing laboratories. This is based upon the preceding classification of fires and the fire extinguishment potentials as determined by fire tests.

Note: The classification and rating system described in this section is that used by Underwriters' Laboratories, Inc. and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

(a) Class A rating—Wood and excelsior fires excluding deep-seated conditions.

(b) Class B rating—Two-inch depth gasoline fires in square pans.

(c) Class C rating—No fire test. Agent must be a nonconductor of electricity.

(d) Class D rating—Special tests on specific combustible metal fires.

(6) A "light hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, churches, assembly halls, telephone exchanges, etc.

(7) An "ordinary hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc.

(8) An "extra hazard" is a situation where the amount of combustibles or flammable liquids present is such that fires of severe magnitude may be expected. These may include woodworking, auto repair, aircraft servicing, warehouses with high-piled (14 feet or higher) combustibles, and processes such as flammable liquid handling, painting, dipping, etc.

(9) Sprinkler system: A "sprinkler system," for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply, such as a gravity tank, fire pump, reservoir, or pressure tank and/or connection by underground piping to a city main. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure or area, generally overhead, and to which sprinklers are connected in a systematic pattern. The system includes a controlling valve and a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area.

Note: The design and installation of water supply facilities such as gravity tanks, fire pumps, reservoirs, or pressure tanks, and underground piping are covered by NFPA Standards No. 22-1970, Water Tanks for Private Fire Protection; No. 20-1970, Installation of Centrifugal Fire Pumps and No. 24-1970, Outside Protection.

(10) Sprinkler alarms: A "sprinkler alarm" unit is an assembly of apparatus approved for the service and so constructed and installed that any flow of water from a sprinkler system equal to or greater than that from a single automatic sprinkler will result in an audible alarm signal on the premises.

(11) Class of service—Standpipe systems: "Standpipe systems" are grouped into three general classes of service for the intended use in the extinguishment of fire.

(a) Class I: For use by fire departments and those trained in handling heavy fire streams (2 1/2-inch hose).

(b) Class II: For use primarily by the building occupants until the arrival of the fire department (small hose).

(c) Class III: For use by either fire departments and those trained in handling heavy hose streams or by the building occupants.

(12) Class I service: "Class I service" is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings or for exposure fire.

(13) Class II service: "Class II service" is a standpipe system which affords a ready means for the control of incipient fires by the occupants of buildings during working hours and by watchmen and those present during the night time and holidays.

(14) Class III service: "Class III service" is a standpipe system capable of furnishing the effective fire streams required during the more advanced stages of fire on the inside of buildings as well as providing a ready means for the control of fires by the occupants of the building.

(15) Standpipe system: "Standpipe systems" are usually of the following types:

(a) A wet standpipe system having a supply valve open and water pressure maintained at all times.

(b) A standpipe system so arranged through the use of approved devices as to admit water to the system automatically by opening a hose valve.

(c) A standpipe system arranged to admit water to the system through manual operation of approved remote control devices located at each hose station.

(d) Dry standpipe having no permanent water supply. See also (11) of this section.

(16) Type I storage: "Type I storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored over 15 feet but not more than 21 feet high in solid piles or over 12 feet but not more that 21 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

(17) Type II storage: "Type II storage" is that in which combustible commodities or noncombustible commodities involving combustible packaging or storage aids are stored not over 15 feet high in solid piles or not over 12 feet high in piles that contain horizontal channels. Minor quantities of commodities of hazard greater than ordinary combustibles may be included without affecting this general classification.

(18) Type III storage: "Type III storage" is that in which the stored commodities, packaging, and storage aids are noncombustible or contain only a small concentration of combustibles which are incapable of producing a fire that would cause appreciable damage to the commodities stored or to noncombustible wall, floor or roof construction. Ordinary combustible commodities in completely sealed noncombustible containers may qualify in this classification. General commodity storage that

is subject to frequent changing and storage of combustible packaging and storage aids is excluded from this category.

(19) Approved: "Approved" means listed or approved by: (a) At least one of the following nationally recognized testing laboratories: Factory Mutual Engineering Corp.; Underwriters' Laboratories, Inc., or (b) federal agencies such as Bureau of Mines, Department of the Interior; Department of Transportation; or U.S. Coast Guard, which issue approvals for such equipment.

[Order 74-27, § 296-24-58501, filed 5/7/74; Order 73-5, § 296-24-58501, filed 5/9/73 and Order 73-4, § 296-24-58501, filed 5/7/73.]

WAC 296-24-58503 Scope, application and definitions applicable. (1) Scope. This subpart contains requirements for fire brigades, and all portable and fixed fire suppression equipment, fire detection systems, and fire or employee alarm systems installed to meet the fire protection requirements of chapter 296-24 WAC.

(2) Application. This subpart applies to all employments except for maritime, construction, and agriculture.

(3) Definitions applicable to this subpart.

(a) "After-flame," means the time a test specimen continues to flame after the flame source has been removed.

(b) "Aqueous film forming foam (AFFF)," means a fluorinated surfactant with a foam stabilizer which is diluted with water to act as a temporary barrier to exclude air from mixing with the fuel vapor by developing an aqueous film on the fuel surface of some hydrocarbons which is capable of suppressing the generation of fuel vapors.

(c) "Approved," means acceptable to the director under the following criteria:

(i) If it is accepted, or certified, or listed, or labeled or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc. or the Factory Mutual System; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency and found in compliance with the provisions of the applicable National Fire Protection Association Fire Code; or

(iii) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director; and

(iv) For the purposes of this subsection (3)(c) of this section:

(A) Equipment is listed if it is of a kind mentioned in a list which is published by a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and which states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner;

(B) Equipment is labeled if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which makes periodic inspections of the production of such equipment and whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner;

(C) Equipment is accepted if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes; and

(D) Equipment is certified if it has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner or is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and if it bears a label, tag, or other record of certification.

(d) "Automatic fire detection device," means a device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.

(e) "Buddy-breathing device," means an accessory to self-contained breathing apparatus which permits a second person to share the same air supply as that of the wearer of the apparatus.

(f) "Carbon dioxide," means a colorless, odorless, electrically nonconductive inert gas (chemical formula CO_2) that is a medium for extinguishing fires by reducing the concentration of oxygen or fuel vapor in the air to the point where combustion is impossible.

(g) "Class A fire," means a fire involving ordinary combustible materials such as paper, wood, cloth, and some rubber and plastic materials.

(h) "Class B fire," means a fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

(i) "Class C fire," means a fire involving energized electrical equipment where safety to the employee requires the use of electrically nonconductive extinguishing media.

(j) "Class D fire," means a fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.

(k) "Dry chemical," means an extinguishing agent composed of very small particles of chemicals such as, but not limited to, sodium bicarbonate, potassium bicarbonate, urea-based potassium bicarbonate, potassium chloride, or monoammonium phosphate supplemented by special treatment to provide resistance to packing and moisture absorption (caking) as well as to provide proper flow capabilities. Dry chemical does not include dry powders.

(l) "Dry powder," means a compound used to extinguish or control Class D fires.

(m) "Education," means the process of imparting knowledge or skill through systematic instruction. It does not require formal classroom instruction.

(n) "Enclosed structure," means a structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulations of smoke, toxic gases and heat similar to those found in buildings.

(o) "Extinguisher classification," means the letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.

(p) "Extinguisher rating," means the numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardized tests developed by Underwriters' Laboratories, Inc.

(q) "Fire brigade," (private fire department, industrial fire department) means an organized group of employees who are knowledgeable, trained, and skilled in at least basic fire fighting operations.

(r) "Fixed extinguishing system," means a permanently installed system that either extinguishes or controls a fire at the location of the system.

(s) "Flame resistance," is the property of materials, or combinations of component materials, to retard ignition and restrict the spread of flame.

(t) "Foam," means a stable aggregation of small bubbles which flow freely over a burning liquid surface and form a coherent blanket which seals combustible vapors and thereby extinguishes the fire.

(u) "Gaseous agent," is a fire extinguishing agent which is in the gaseous state at normal room temperature and pressure. It has low viscosity, can expand or contract with changes in pressure and temperature, and has the ability to diffuse readily and to distribute itself uniformly throughout an enclosure.

(v) "Halon 1211," means a colorless, faintly sweet smelling, electrically nonconductive liquefied gas (chemical formula $CBrC1F_2$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromochlorodifluoromethane.

(w) "Halon 1301," means a colorless, odorless, electrically nonconductive gas (chemical formula $CBrF_3$) which is a medium for extinguishing fires by inhibiting the chemical chain reaction of fuel and oxygen. It is also known as bromotrifluoromethane.

(x) "Helmet," is a head protective device consisting of a rigid shell, energy absorption system and chin strap intended to be worn to provide protection for the head or portions thereof, against impact, flying or falling objects, electric shock, penetration, heat and flame.

(y) "Incipient stage fire," means a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.

(z) "Inspection," means a visual check of fire protection systems and equipment to ensure that they are in place, charged, and ready for use in the event of a fire.

(aa) "Interior structural fire fighting," means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

(bb) "Lining," means a material permanently attached to the inside of the outer shell of a garment for the purpose of thermal protection and padding.

(cc) "Local application system," means a fixed fire suppression system which has a supply of extinguishing agent, with nozzles arranged to automatically discharge extinguishing agent directly on the burning material to extinguish or control a fire.

(dd) "Maintenance," means the performance of services on fire protection equipment and systems to assure that they will perform as expected in the event of a fire. Maintenance differs from inspection in that maintenance requires the checking of internal fitting, devices and agent supplies.

(ee) "Multipurpose dry chemical," means a dry chemical which is approved for use on Class A, Class B and Class C fires.

(ff) "Outer shell," is the exterior layer of material on the fire coat and protective trousers which forms the outermost barrier between the fire fighter and the environment. It is attached to the vapor barrier and liner and is usually constructed with a storm flap, suitable closures, and pockets.

(gg) "Positive–pressure breathing apparatus," means self–contained breathing apparatus in which the pressure in the breathing zone is positive in relation to the immediate environment during inhalation and exhalation.

(hh) "Predischarge employee alarm," means an alarm which will sound at a set time prior to actual discharge of an extinguishing system so that employees may evacuate the discharge area prior to system discharge.

(ii) "Quick disconnect valve," means a device which starts the flow of air by inserting of the hose (which leads from the facepiece) into the regulator of self–contained breathing apparatus, and stops the flow of air by disconnection of the hose from the regulator.

(jj) "Sprinkler alarm," means an approved device installed so that any waterflow from a sprinkler system equal to or greater than that from single automatic sprinkler will result in an audible alarm signal on the premises.

(kk) "Sprinkler system," means a system of piping designed in accordance with fire protection engineering standards and installed to control or extinguish fires. The system includes an adequate and reliable water supply, and a network of specially sized piping and sprinklers which are interconnected. The system also includes a control valve and a device for actuating an alarm when the system is in operation.

(ll) "Standpipe systems:"

(i) "Class I standpipe system," means a two and one–half–inch (6.3 cm) hose connection for use by fire departments and those trained in handling heavy fire streams.

(ii) "Class II standpipe system," means a one and one–half–inch (3.8 cm) hose system which provides a means for the control or extinguishment of incipient stage fires.

(iii) "Class III standpipe system," means a combined system of hose which is for the use of employees trained in the use of hose operations and which is capable of furnishing effective water discharge during the more advanced stages of fire (beyond the incipient stage) in the interior of workplaces. Hose outlets are available for both one and one–half–inch (3.8 cm) and two and one–half–inch (6.3 cm) hose.

(iv) "Small hose system," means a system of hose ranging in diameter from five–eighths–inch (1.6 cm) up to one and one–half–inch (3.8 cm) which is for the use of employees and which provides a means for the control and extinguishment of incipient stage fires.

(mm) "Total flooding system," means a fixed suppression system which is arranged to automatically discharge a predetermined concentration of agent into an enclosed space for the purpose of fire extinguishment or control.

(nn) "Training," means the process of making proficient through instruction and hands–on practice in the operation of equipment, including respiratory protection equipment, that is expected to be used in the performance of assigned duties.

(oo) "Vapor barrier," means that material used to prevent or substantially inhibit the transfer of water, corrosive liquids and steam or other hot vapors from the outside of a garment to the wearer's body.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58503, filed 12/24/81.]

WAC 296-24-58505 Fire brigades. Scope and application.

(1) Scope. This section contains requirements for the organization, training and personal protective equipment of fire brigades whenever they are established by an employer.

(2) Application. The requirements of this section apply to fire brigades, industrial fire departments and private or contractual type fire departments. Personal protective equipment requirements apply only to members of fire brigades performing interior structural fire fighting. The requirements of this section do not apply to airport crash rescue or forest fire fighting operations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58505, filed 12/24/81.]

WAC 296-24-58507 Organization. (1) Organizational statement. The employer shall prepare and maintain a statement or written policy which establishes the existence of a fire brigade; the basic organizational structure; the type, amount, and frequency of training to be provided to fire brigade members; the expected number of members in the fire brigade; and the functions that the fire brigade is to perform at the workplace. The organizational statement shall be available for inspection by the director and by employees or their designated representatives.

(2) Personnel. The employer shall assure that employees who are expected to do interior structural fire fighting are physically capable of performing duties which may be assigned to them during emergencies. The employer shall not permit employees with known heart disease, epilepsy, or emphysema, to participate in fire brigade emergency activities unless a physician's certificate of the employees' fitness to participate in such activities is provided. For employees assigned to fire brigades before September 15, 1980, this section is effective on September 15, 1990. For employees assigned to fire brigades on or after September 15, 1980, this section is effective thirty days after filing with the code reviser.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58507, filed 12/24/81.]

WAC 296-24-58509 Training and education. (1) The employer shall provide training and education for all fire brigade members commensurate with those duties and functions that fire brigade members are expected to perform. Such training and education shall be provided to fire brigade members before they perform fire brigade emergency activities. Fire brigade leaders and training instructors shall be provided with training and education which is more comprehensive than that provided to the general membership of the fire brigade.

(2) The employer shall assure that training and education is conducted frequently enough to assure that each member of the fire brigade is able to perform the member's assigned duties and functions satisfactorily and in a safe manner so as not to endanger fire brigade members or other employees. All fire brigade members shall be provided with training at least annually. In addition, fire brigade members who are expected to perform interior structural fire fighting shall be provided with an education session or training at least quarterly.

(3) The quality of the training an education program for fire brigade members shall be similar to those conducted by such fire training schools as the Maryland Fire and Rescue Institute; Iowa Fire Service Extension; West Virginia Fire Service Extension; Georgia Fire Academy; New York State Department, Fire Prevention and Control; Louisiana State University Firemen Training Program; or Washington State's Fire Service Training Commission for Vocational Education. (For example, for the oil refinery industry, with its unique hazards, the training and education program for those fire brigade members shall be similar to those conducted by Texas A and M University, Lamar University, Reno Fire School, or the Delaware State Fire School.)

(4) The employer shall inform fire brigade members about special hazards such as storage and use of flammable liquids and gases, toxic chemicals, radioactive sources, and water reactive substances, to which they may be exposed during fire and other emergencies. The fire brigade members shall also be advised of any changes that occur in relation to the special hazards. The employer shall develop and make available for inspection by fire brigade members, written procedures that describe the actions to be taken in situations involving the special hazards and shall include these in the training and education program.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–58509, filed 12/24/81.]

WAC 296-24-58511 Fire fighting equipment. The employer shall maintain and inspect, at least annually, fire fighting equipment to assure the safe operational condition of the equipment. Portable fire extinguishers and respirators shall be inspected at least monthly. Fire fighting equipment that is in damaged or unserviceable condition shall be removed from service and replaced.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58511, filed 12/24/81.]

WAC 296-24-58513 Protective clothing. The following requirements apply to those employees who perform interior structural fire fighting. The requirements do not apply to employees who use fire extinguishers or standpipe systems to control or extinguish fires only in the incipient stage.

(1) General.

(a) The employer shall provide at no cost to the employee and assure the use of protective clothing which complies with the requirements of this section. The employer shall assure that protective clothing ordered or purchased after January 1, 1982, meets the requirements contained in this section. As the new equipment is provided, the employer shall assure that all fire brigade members wear the equipment when performing interior structural fire fighting. After July 1, 1985, the employer shall assure that all fire brigade members wear protective clothing meeting the requirements of this section when performing interior structural fire fighting.

(b) The employer shall assure that protective clothing protects the head, body, and extremities, and consists of at least the following components: Foot and leg protection; hand protection; body protection; eye, face and head protection.

(2) Foot and leg protection.

(a) Foot and leg protection shall meet the requirements of subsection (2)(b) and (c) of this section, and may be achieved by either of the following methods:

(i) Fully extended boots which provide protection for the legs; or

(ii) Protective shoes or boots worn in combination with protective trousers that meet the requirements of subsection (3) of this section.

(b) Protective footwear shall meet the requirements of WAC 296-24-088 for Class 75 footwear. In addition, protective footwear shall be water-resistant for at least five inches (12.7 cm) above the bottom of the heel and shall be equipped with slip-resistant outer soles.

(c) Protective footwear shall be tested in accordance with paragraph (1) Appendix E, and shall provide protection against penetration of the midsole by a size 8D common nail when at least 300 pounds (1330 N) of static force is applied to the nail.

(3) Body protection.

(a) Body protection shall be coordinated with foot and leg protection to ensure full body protection for the wearer. This shall be achieved by one of the following methods:

(i) Wearing of a fire-resistive coat meeting the requirements of subsection (3)(b) of this section, in combination with fully extended boots meeting the requirements of subsection (2)(b) and (c) of this section; or

(ii) Wearing of fire-resistive coat in combination with protective trousers both of which meet the requirements of subsection (3)(b) of this section.

(b) The performance, construction, and testing of fire-resistive coats and protective trousers shall be at least equivalent to the requirements of the National Fire Protection Association (NFPA) standard NFPA No. 1971-1975, "Protective Clothing for Structural Fire Fighting," (see Appendix D) with the following permissible variations from those requirements:

(i) Tearing strength of the outer shell shall be a minimum of eight pounds (35.6 N) in any direction when tested in accordance with paragraph (2) of Appendix E; and

(ii) The outer shell may discolor but shall not separate or melt when placed in a forced air laboratory oven at a temperature of 500°F (260°C) for a period of five minutes. After cooling to ambient temperature and using the test method specified in paragraph (3) of Appendix E, char length shall not exceed 4.0 inches (10.2 cm) and after-flame shall not exceed 2.0 seconds.

(4) Hand protection.

(a) Hand protection shall consist of protective gloves or glove system which will provide protection against cut, puncture, and heat penetration. Gloves or glove system shall be tested in accordance with the test methods contained in the National Institute for Occupational Safety and Health (NIOSH) 1976 publication, "The Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods," (see Appendix D to Subpart L) and shall meet the following criteria for cut, puncture, and heat penetration:

(i) Materials used for gloves shall resist surface cut by a blade with an edge having a 60 degree included angle and a .025 mm (.001 inch) radius, under an applied force of 7.2 kg (16 pounds), and at a slicing velocity of greater or equal to 2.5 cm/sec (60 in/min);

(ii) Materials used for the palm and palm side of the fingers shall resist puncture by a penetrometer (simulating a 4d lath nail), under an applied force of 6 kg (13.2 pounds), and at a velocity greater or equal to .85 cm/sec (20 in/min); and

(iii) The temperature inside the palm and gripping surface of the fingers of gloves shall not exceed 57°C (135°F) when gloves or glove system are exposed to 500°C (932°F) for five seconds at 28 kPa (4 psi) pressure.

(b) Exterior materials of gloves shall be flame resistant and shall be tested in accordance with paragraph (3) of Appendix E. Maximum allowable after-flame shall be 2.0 seconds, and the maximum char length shall be 4.0 inches (10.2 cm).

(c) When design of the fire-resistive coat does not otherwise provide protection for the wrists, protective gloves shall have wristlets of at least 4.0 inches (10.2 cm) in length to protect the wrist area when the arms are extended upward and outward from the body.

(5) Head, eye and face protection.

(a) Head protection shall consist of a protective head device with ear flaps and chin strap which meet the performance, construction, and testing requirements of the National Fire Safety and Research Office of the National Fire Prevention and Control Administration, United States Department of Commerce (now known as the United States Fire Administration), which are contained in, "Model Performance Criteria for Structural

Firefighters' Helmets," (August 1977) (see Appendix D).

(b) Protective eye and face devices which comply with WAC 296-24-078 shall be used by fire brigade members when performing operations where the hazards of flying or falling materials which may cause eye and face injuries are present. Protective eye and face devices provided as accessories to protective head devices (face shields) are permitted when such devices meet the requirements of WAC 296-24-078.

(c) Full facepieces, helmets, or hoods of breathing apparatus which meet the requirements of WAC 296-62-071 and 296-24-58515, shall be acceptable as meeting the eye and face protection requirements of subsection (5)(b) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58513, filed 12/24/81.]

WAC 296-24-58515 Respiratory protection devices. (1) General requirements.

(a) The employer shall provide at no cost to the employee and assure the use of respirators which comply with the requirements of this paragraph. The employer shall assure that respiratory protective devices worn by brigade members meet the requirements contained in WAC 296-62-071, and the requirements contained in this paragraph, and are certified under 30 CFR Part II.

(b) Approved self-contained breathing apparatus with full-facepiece, or with approved helmet or hood configuration, shall be provided to and worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency may be present. Such apparatus shall also be worn during emergency situations involving toxic substances.

(c) Approved self-contained breathing apparatus may be equipped with either a "buddy-breathing" device or a quick disconnect valve, even if these devices are not certified by NIOSH. If these accessories are used, they shall not cause damage to the apparatus, or restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

(d) Approved self-contained compressed air breathing apparatus may be used with approved cylinders from other approved self-contained compressed air breathing apparatus provided that such cylinders are of the same capacity and pressure rating. All compressed air cylinders used with self-contained breathing apparatus shall meet DOT and NIOSH criteria.

(e) Self-contained breathing apparatus shall have a minimum service life rating of thirty minutes in accordance with the methods and requirements of the mine safety and health administration (MSHA) and NIOSH, except for escape self-contained breathing apparatus (ESCBA) used only for emergency escape purposes.

(f) Self-contained breathing apparatus shall be provided with an indicator which automatically sounds an audible alarm when the remaining service life of the apparatus is reduced to within a range of twenty to twenty-five percent of its rated service time.

(2) Positive-pressure breathing apparatus.

(a) The employer shall assure that self-contained breathing apparatus ordered or purchased after January 1, 1982, for use by fire brigade members performing interior structural fire fighting operations, are of the pressure-demand or other positive-pressure type. Effective July 1, 1983, only pressure-demand or other positive-pressure self-contained breathing apparatus shall be worn by fire brigade members performing interior structural fire fighting.

(b) This section does not prohibit the use of a self-contained breathing apparatus where the apparatus can be switched from a demand to a positive-pressure mode. However, such apparatus shall be in the positive-pressure mode when fire brigade members are performing interior structural fire fighting operations.

(c) Negative-pressure self-contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000, as determined by an acceptable quantitative fit test performed on each individual, is acceptable for use only during those interior structural fire fighting situations for which the employer demonstrates that long duration breathing apparatus is necessary. Quantitative fit test procedures shall be available for inspection by the director or authorized representative. Such negative-pressure breathing apparatus will continue to be acceptable for eighteen months after a positive-pressure breathing apparatus with the same or longer rated service life is certified by NIOSH. After this eighteen-month period, all self-contained breathing apparatus used for these long duration situations shall be of the positive-pressure type.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58515, filed 12/24/81.]

WAC 296-24-58517 Appendix A--Fire brigades. (1) Scope. This section does not require an employer to organize a fire brigade. However, if an employer does decide to organize a fire brigade, the requirements of this section apply.

(2) Prefire planning. It is suggested that prefire planning be conducted by the local fire department and/or the workplace fire brigade in order for them to be familiar with the workplace and process hazards. Involvement with the local fire department or fire prevention bureau is encouraged to facilitate coordination and cooperation between members of the fire brigade and those who might be called upon for assistance during a fire emergency.

(3) Organizational statement. In addition to the information required in the organizational statement, WAC 296-24-58507(1), it is suggested that the organizational statement also contain the following information: A description of the duties that the fire brigade members are expected to perform; the line authority of each fire brigade officer; the number of the fire brigade officers and number of training instructors; and a list and description of the types of awards or recognition that brigade members may be eligible to receive.

(4) Physical capability. The physical capability requirement applies only to those fire brigade members who perform interior structural fire fighting. Employees

who cannot meet the physical capability requirement may still be members of the fire brigade as long as such employees do not perform interior structural fire fighting. It is suggested that fire brigade members who are unable to perform interior structural fire fighting be assigned less stressful and physically demanding fire brigade duties, e.g., certain types of training, recordkeeping, fire prevention inspection and maintenance, and fire pump operations.

Physically capable can be defined as being able to perform those duties specified in the training requirements of WAC 296-24-58509. Physically capable can also be determined by physical performance tests or by a physical examination when the examining physician is aware of the duties that the fire brigade member is expected to perform.

It is also recommended that fire brigade members participate in a physical fitness program. There are many benefits which can be attributed to being physically fit. It is believed that physical fitness may help to reduce the number of sprain and strain injuries as well as contributing to the improvement of the cardiovascular system.

(5) Training and education. The paragraph on training and education does not contain specific training and education requirements because the type, amount, and frequency of training and education will be as varied as are the purposes for which fire brigades are organized. However, the paragraph does require that training and education be commensurate with those functions that the fire brigade is expected to perform; i.e., those functions specified in the organizational statement. Such a performance requirement provides the necessary flexibility to design a training program which meets the needs of individual fire brigades.

At a minimum, hands-on training is required to be conducted annually for all fire brigade members. However, for those fire brigade members who are expected to perform interior structural fire fighting, some type of training or education session must be provided at least quarterly.

In addition to the required hands-on training, it is strongly recommended that fire brigade members receive other types of training and education such as: Classroom instruction, review of emergency action procedures, prefire planning, review of special hazards in the workplace, and practice in the use of self-contained breathing apparatus.

It is not necessary for the employer to duplicate the same training or education that a fire brigade member receives as a member of a community volunteer fire department, rescue squad, or similar organization. However, such training or education must have been provided to the fire brigade member within the past year and it must be documented that the fire brigade member has received the training or education. For example: There is no need for a fire brigade member to receive another training class in the use of positive-pressure self-contained breathing apparatus if the fire brigade member has recently completed such training as a member of a community fire department. Instead, the fire brigade member should receive training or education covering other important equipment or duties of the fire brigade as they relate to the workplace hazards, facilities and processes.

It is generally recognized that the effectiveness of fire brigade training and education depends upon the expertise of those providing the training and education as well as the motivation of the fire brigade members. Fire brigade training instructors must receive a higher level of training and education than the fire brigade members they will be teaching. This includes being more knowledgeable about the functions to be performed by the fire brigade and the hazards involved. The instructors should be qualified to train fire brigade members and demonstrate skills in communication, methods of teaching, and motivation. It is important for instructors and fire brigade members alike to be motivated toward the goal of the fire brigade and be aware of the importance of the service that they are providing for the protection of other employees and the workplace.

It is suggested that publications from the International Fire Service Training Association, the National Fire Protection Association (NFPA-1041), the International Society of Fire Service Instructors and other fire training sources be consulted for recommended qualifications of fire brigade training instructors.

In order to be effective, fire brigades must have competent leadership and supervision. It is important for those who supervise the fire brigade during emergency situations, e.g., fire brigade chiefs, leaders, etc., to receive the necessary training and education for supervising fire brigade activities during these hazardous and stressful situations. These fire brigade members with leadership responsibilities should demonstrate skills in strategy and tactics, fire suppression and prevention techniques, leadership principles, prefire planning, and safety practices. It is again suggested that fire service training sources be consulted for determining the kinds of training and education which are necessary for those with fire brigade leadership responsibilities.

It is further suggested that fire brigade leaders and fire brigade instructors receive more formalized training and education on a continuing basis by attending classes provided by such training sources as universities and university fire extension services.

The following recommendations should not be considered to be all of the necessary elements of a complete comprehensive training program, but the information may be helpful as a guide in developing a fire brigade training program.

All fire brigade members should be familiar with exit facilities and their location, emergency escape routes for handicapped workers, and the workplace "emergency action plan."

In addition, fire brigade members who are expected to control and extinguish fires in the incipient stage should, at a minimum, be trained in the use of fire extinguishers, standpipes, and other fire equipment they are assigned to use. They should also be aware of first aid medical procedures and procedures for dealing with special hazards to which they may be exposed. Training and education

should include both classroom instruction and actual operation of the equipment under simulated emergency conditions. Hands–on type training must be conducted at least annually but some functions should be reviewed more often.

In addition to the above training, fire brigade members who are expected to perform emergency rescue and interior structural fire fighting should, at a minimum, be familiar with the proper techniques in rescue and fire suppression procedures. Training and education should include fire protection courses, classroom training, simulated fire situations including "wet drills" and, when feasible, extinguishment of actual mock fires. Frequency of training or education must be at least quarterly, but some drills or classroom training should be conducted as often as monthly or even weekly to maintain the proficiency of fire brigade members.

There are many excellent sources of training and education that the employer may want to use in developing a training program for the workplace fire brigade. These sources include publications, seminars, and courses offered by universities.

There are also excellent fire school courses by such facilities as Texas A and M University, Delaware State Fire School, Lamar University, and Reno Fire School, that deal with those unique hazards which may be encountered by fire brigades in the oil and chemical industry. These schools, and others, also offer excellent training courses which would be beneficial to fire brigades in other types of industries. These courses should be a continuing part of the training program, and employers are strongly encouraged to take advantage of these excellent resources.

It is also important that fire brigade members be informed about special hazards to which they may be exposed during fire and other emergencies. Such hazards as storage and use areas of flammable liquids and gases, toxic chemicals, water–reactive substances, etc., can pose difficult problems. There must be written procedures developed that describe the actions to be taken in situations involving special hazards. Fire brigade members must be trained in handling these special hazards as well as keeping abreast of any changes that occur in relation to these special hazards.

(6) Fire fighting equipment. It is important that fire fighting equipment that is in damaged or unserviceable condition be removed from service and replaced. This will prevent fire brigade members from using unsafe equipment by mistake.

Fire fighting equipment, except portable fire extinguishers and respirators, must be inspected at least annually. Portable fire extinguishers and respirators are required to be inspected at least monthly.

(7) Protective clothing.

(a) General. WAC 296–24–58513 does not require all fire brigade members to wear protective clothing. It is not the intention of these standards to require employers to provide a full ensemble of protective clothing for every fire brigade member without consideration given to the types of hazardous environments to which the fire brigade member might be exposed. It is the intention of these standards to require adequate protection for those fire brigade members who might be exposed to fires in an advanced stage, smoke, toxic gases, and high temperatures. Therefore, the protective clothing requirements only apply to those fire brigade members who perform interior structural fire fighting operations.

Additionally, the protective clothing requirements do not apply to the protective clothing worn during outside fire fighting operations (brush and forest fires, crash crew operations) or other special fire fighting activities. It is important that the protective clothing to be worn during these types of fire fighting operations reflect the hazards which are expected to be encountered by fire brigade members.

(b) Foot and leg protection. WAC 296–24–58505 permits an option to achieve foot and leg protection.

The section recognizes the interdependence of protective clothing to cover one or more parts of the body. Therefore, an option is given so that fire brigade members may meet the foot and leg requirements by either wearing long fire–resistive coats in combination with fully extended boots, or by wearing shorter fire–resistive coats in combination with protective trousers and protective shoes or shorter boots.

(c) Body protection. WAC 296–24–58513(3) provides an option for fire brigade members to achieve body protection. Fire brigade members may wear a fire–resistive coat in combination with fully extended boots, or they may wear a fire–resistive coat in combination with protective trousers.

Fire–resistive coats and protective trousers meeting all of the requirements contained in NFPA 1971–1975, "Protective Clothing for Structural Fire Fighters," are acceptable as meeting the requirements of this standard.

The lining is required to be permanently attached to the outer shell. However, it is permissible to attach the lining to the outer shell material by stitching in one area such as at the neck. Fastener tape or snap fasteners may be used to secure the rest of the lining to the outer shell to facilitate cleaning. Reference to permanent lining does not refer to a winter liner which is a detachable extra lining used to give added protection to the wearer against the effects of cold weather and wind.

(d) Hand protection. The requirements of subsection (4) of this section on hand protection may be met by protective gloves or a glove system. A glove system consists of a combination of different gloves. The usual components of a glove system consist of a pair of gloves, which provide thermal insulation to the hand, worn in combination with a second pair of gloves which provide protection against flame, cut and puncture.

It is suggested that protective gloves provide dexterity and a sense of feel for objects. Criteria and test methods for dexterity are contained in the NIOSH publications, "The Development of Criteria for Firefighters' Gloves; Vol. I: Glove Requirements," and "Vol. II: Glove Criteria and Test Methods." These NIOSH publications also contain a permissible modified version of Federal Test Method 191, Method 5903, (paragraph (3) of Appendix E) for flame resistance when gloves, rather than glove material, are tested for flame resistance.

(e) Head, eye and face protection. Head protective devices which meet the requirements contained in NFPA No. 1972 are acceptable as meeting the requirements of this standard for head protection.

Head protective devices are required to be provided with ear flaps so that the ear flaps will be available if needed. It is recommended that ear protection always be used while fighting interior structural fires.

Many head protective devices are equipped with face shields to protect the eyes and face. These face shields are permissible as meeting the eye and face protection requirements of this paragraph as long as such face shields meet the requirements of WAC 296-24-078 of the general safety and health standards.

Additionally, full facepieces, helmets or hoods of approved breathing apparatus which meet the requirements of WAC 296-62-071 and 296-24-58515 are also acceptable as meeting the eye and face protection requirements.

It is recommended that a flame resistant protective head covering such as a hood or snood, which will not adversely affect the seal of a respirator facepiece, be worn during interior structural fire fighting operations to protect the sides of the face and hair.

(8) Respiratory protective devices. Respiratory protection is required to be worn by fire brigade members while working inside buildings or confined spaces where toxic products of combustion or an oxygen deficiency is likely to be present; respirators are also to be worn during emergency situations involving toxic substances. When fire brigade members respond to emergency situations, they may be exposed to unknown contaminants in unknown concentrations. Therefore, it is imperative that fire brigade members wear proper respiratory protective devices during these situations. Additionally, there are many instances where toxic products of combustion are still present during mop-up and overhaul operations. Therefore, fire brigade members should continue to wear respirators during these types of operations.

Self-contained breathing apparatus are not required to be equipped with either buddy-breathing device or a quick disconnect valve. However, these accessories may be very useful and are acceptable as long as such accessories do not cause damage to the apparatus, restrict the air flow of the apparatus, or obstruct the normal operation of the apparatus.

Buddy-breathing devices are useful for emergency situations where a victim or another fire brigade member can share the same air supply with the wearer of the apparatus for emergency escape purposes.

The employer is encouraged to provide fire brigade members with an alternative means of respiratory protection to be used only for emergency escape purposes if the self-contained breathing apparatus becomes inoperative. Such alternative means of respiratory protection may be either a buddy-breathing device or an escape self-contained breathing apparatus (ESCBA). The ESCBA is a short-duration respiratory protective device which is approved for only emergency escape purposes. It is suggested that if ESCBA units are used, that they be of at least five minutes service life.

Quick disconnect valves are devices which start the flow of air by insertion of the hose (which leads to the facepiece) into the regulator of self-contained breathing apparatus, and stop the flow of air by disconnecting the hose from the regulator. These devices are particularly useful for those positive-pressure self-contained breathing apparatus which do not have the capability of being switched from the demand to the positive-pressure mode.

The use of a self-contained breathing apparatus where the apparatus can be switched from a demand to a positive-pressure mode is acceptable as long as the apparatus is in the positive-pressure mode when performing interior structural fire fighting operations. Also acceptable are approved respiratory protective devices which have been converted to the positive-pressure type when such modification is accomplished by trained and experienced persons using kits or parts approved by NIOSH and provided by the manufacturer and by following the manufacturer's instructions.

There are situations which require the use of respirators which have a duration of two hours or more. Presently, there are no approved positive-pressure apparatus with a rated service life of more than two hours. Consequently, negative-pressure self-contained breathing apparatus with a rated service life of more than two hours and which have a minimum protection factor of 5,000 as determined by an acceptable quantitative fit test performed on each individual, will be acceptable for use during situations which require long duration apparatus. Long duration apparatus may be needed in such instances as working in tunnels, subway systems, etc. Such negative-pressure breathing apparatus will continue to be acceptable for a maximum of eighteen months after a positive-pressure apparatus with the same or longer rated service life of more than two hours is certified by NIOSH/MSHA. After this eighteen-month phase-in period, all self-contained breathing apparatus used for these long duration situations will have to be of the positive-pressure type.

Protection factor (sometimes called fit factor) is defined as the ratio of the contaminant concentrations outside of the respirator to the contaminant concentrations inside the facepiece of the respirator.

$$PF = \frac{\text{Concentration outside respirator}}{\text{Concentration inside facepiece}}$$

Protection factors are determined by quantitative fit tests. An acceptable quantitative fit test should include the following elements:

(a) A fire brigade member who is physically and medically capable of wearing respirators, and who is trained in the use of respirators, dons a self-contained breathing apparatus equipped with a device that will monitor the concentration of a contaminant inside the facepiece.

(b) The fire brigade member then performs a qualitative fit test to assure the best face-to-facepiece seal as possible. A qualitative fit test can consist of a negative-

pressure test, positive-pressure test, isoamyl acetate vapor (banana oil) test, or an irritant smoke test. For more details on respirator fitting see the NIOSH booklet entitled, "A Guide to Industrial Respiratory Protection," June 1976, and HEW publication No. (NIOSH) 76-189.

(c) The wearer should then perform physical activity which reflects the level of work activity which would be expected during fire fighting activities. The physical activity should include simulated fire-ground work activity or physical exercise such as running-in-place, a step test, etc.

(d) Without readjusting the apparatus, the wearer is placed in a test atmosphere containing a nontoxic contaminant with a known, constant concentration.

The protection factor is then determined by dividing the known concentration of the contaminant in the test atmosphere by the concentration of the contaminant inside the facepiece when the following exercises are performed:

(i) Normal breathing with head motionless for one minute;

(ii) Deep breathing with head motionless for thirty seconds;

(iii) Turning head slowly from side to side while breathing normally, pausing for at least two breaths before changing direction. Continue for at least one minute;

(iv) Moving head slowly up and down while breathing normally, pausing for at least two breaths before changing direction. Continue for at least two minutes;

(v) Reading from a prepared text, slowly and clearly, and loudly enough to be heard and understood. Continue for one minute; and

(vi) Normal breathing with head motionless for at least one minute.

The protection factor which is determined must be at least 5,000. The quantitative fit test should be conducted at least three times. It is acceptable to conduct all three tests on the same day. However, there should be at least one hour between tests to reflect the protection afforded by the apparatus during different times of the day.

The above elements are not meant to be a comprehensive, technical description of a quantitative fit test protocol. However, quantitative fit test procedures which include these elements are acceptable for determining protection factors. Procedures for a quantitative fit test are required to be available for inspection by the director or authorized representative.

Organizations such as Los Alamos Scientific Laboratory, Lawrence Livermore Laboratory, NIOSH, and American National Standards Institute (ANSI) are excellent sources for additional information concerning qualitative and quantitative fit testing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-58517, filed 12/24/81.]

WAC 296-24-590 Portable fire suppression equipment--Portable fire extinguishers.

[Order 73-5, § 296-24-590, filed 5/9/73 and Order 73-4, § 296-24-590, filed 5/7/73.]

WAC 296-24-59001 General requirements. (1) Operable condition. Portable extinguishers shall be maintained in a fully charged and operable condition, and kept in their designated places at all times when they are not being used.

(2) Location. Extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. They shall be located along normal paths of travel.

(3) Marking of location. Extinguishers shall not be obstructed or obscured from view. In large rooms, and in certain locations where visual obstruction cannot be completely avoided, means shall be provided to indicate the location and intended use of extinguishers conspicuously.

(4) Marking of extinguishers. If extinguishers intended for different classes of fire are grouped, their intended use shall be marked conspicuously to insure choice of the proper extinguisher at the time of a fire.

(5) Mounting of extinguishers. Extinguishers shall be installed on the hangers or in the brackets supplied, mounted in cabinets, or set on shelves unless the extinguishers are of the wheeled type.

(6) Height of mounting. Extinguishers having a gross weight not exceeding 40 pounds shall be installed so that the top of the extinguisher is not more than 5 feet above the floor. Extinguishers having a gross weight greater than 40 pounds (except wheeled types) shall be so installed that the top of the extinguisher is not more than 3 1/2 feet above the floor.

(7) Cabinet mounting. Extinguisher mounted in cabinets or wall recesses or set on shelves shall be placed in a manner such that the extinguisher operating instructions face outward. The location of such extinguishers shall be marked conspicuously.

(8) Vibrating location. Extinguishers installed under conditions where they are subject to severe vibration shall be installed in brackets specifically designed to withstand the impact of vibration and to prevent the extinguisher from becoming dislodged.

(9) Temperature range. Extinguishers shall be suitable for use within a temperature range of at least plus 40° to 120° Fahrenheit.

(10) Extreme temperature exposure. When extinguishers are installed in locations subjected to temperatures outside the range prescribed in WAC 296-24-59001(9), they shall be of a type approved or listed for the temperature to which they will be exposed, or placed in an enclosure capable of maintaining the temperature within the range prescribed in WAC 296-24-59001(9).

[Order 73-5, § 296-24-59001, filed 5/9/73 and Order 73-4, § 296-24-59001, filed 5/7/73.]

WAC 296-24-59003 Selection of extinguishers. (1) General. The selection of extinguishers for a given situation will depend upon the character of the fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions, and other factors. The number

of extinguishers required shall be determined by reference to WAC 296–24–59005. Approved fire extinguishers shall be used to meet the requirements of this section.

(2) Selection by hazard.

(a) Extinguishers shall be selected for the specific classes of hazards to be protected in accordance with the following sections.

(b) Extinguishers for protecting Class A hazards shall be selected from among the following: Foam, loaded stream, multipurpose dry chemical, and water types. Certain smaller extinguishers which are charged with multipurpose dry chemical are rated on Class B and Class C fires, but have insufficient effectiveness to earn the minimum 1–A rating even though they have value in extinguishing smaller Class A fires.

Such smaller extinguishers shall not be used to meet the requirements of WAC 296–24–59005 (2)(a).

(c) Extinguishers for protection of Class B hazards shall be selected from the following: Bromotrifluoromethane, carbon dioxide, dry chemical, foam, loaded stream, and multipurpose dry chemical. Extinguishers with ratings less than 1–B shall not be considered in determining suitability.

(d) Extinguishers for protection of Class C hazards shall be selected from the following: Bromotrifluoromethane, carbon dioxide, dry chemical, and multipurpose dry chemical.

Note: Carbon dioxide extinguishers equipped with metal horns are not considered safe for use on fires in energized electrical equipment, and therefore, are not classified for use on Class C hazards.

(e) Extinguishers and extinguishing agents for the protection of Class D hazards shall be of types approved for use on the specific combustible–metal hazard.

[Order 74–27, § 296–24–59003, filed 5/7/74; Order 73–5, § 296–24–59003, filed 5/9/73 and Order 73–4, § 296–24–59003, filed 5/7/73.]

WAC 296–24–59005 Distribution of portable fire extinguishers. (1) General.

(a) The number of fire extinguishers needed to protect a property shall be determined as prescribed herein, considering the area and arrangement of the building or occupancy, the severity of the hazard, the anticipated classes of fires, and the distances to be traveled to reach extinguishers.

(b) Fire extinguishers shall be provided for the protection of both the building structure, if combustible, and the occupancy hazards contained therein.

(c) Required building protection shall be provided by fire extinguishers suitable for Class A fires.

(d) Occupancy hazard protection shall be provided by fire extinguishers suitable for such Class A, B, C, or D fire potentials as may be present.

(e) Extinguishers provided for building protection may be considered also for the protection of occupancies having a Class A fire potential.

(f) Combustible buildings having an occupancy hazard subject to Class B, and/or Class C fires, shall have a standard complement of Class A fire extinguishers as required by Table L–1 for building protection, plus additional Class B and/or Class C extinguishers. Where fire extinguishers have more than one letter classification (such as 2–A; 20–B;C), they may be considered to satisfy the requirements of each letter class.

(g) Rooms or areas shall be graded generally as light hazard, ordinary hazard, or extra hazard. Limited areas of greater or lesser hazard shall be protected as required.

(2) Fire extinguisher size and placement for Class A hazards.

(a) Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table L–1. Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in Table L–1.

TABLE L–1

Basic minimum extinguisher rating for area specified	Maximum travel distances to extinguishers (feet)	Areas to be protected per extinguisher		
		Light hazard occupancy (square feet)	Ordinary hazard occupancy (square feet)	Extra hazard occupancy (square feet)
1A.....	75	3,000	Note 1	Note 1
2A.....	75	6,000	3,000	Note 1
3A.....	75	9,000	4,500	3,000
4A.....	75	11,250	6,000	4,000
6A.....	75	11,250	9,000	6,000

Note 1: Not permitted except as specified in (2)(b) of this section.

(b) The protection requirements specified in Table L–1 may be fulfilled by several extinguishers of lower ratings for ordinary or extra hazard occupancies.

(c) Where the floor area of a building is less than that specified in Table L–1, at least one extinguisher of the minimum size recommended shall be provided.

(d) The protection requirements may be fulfilled with extinguishers of higher rating provided the travel distance to such larger extinguishers shall not exceed 75 feet.

(3) Fire extinguisher size and placement for Class B fires other than for fires in flammable liquids of appreciable depth.

(a) Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table L–2. Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in Table L–2.

TABLE L-2

Type of hazard	Basic minimum extinguisher rating	Maximum travel distance to extinguishers (feet)
Light	4B	50
Ordinary	8B	50
Extra	12B	50

Note: Where this section calls for minimum extinguisher ratings of 4-B, 8-B, or 12-B, the requirements may be met be existing extinguishers of multiple foam extinguishers as allowed by (3)(b) of this section. However, if a single extinguisher must be purchased to fulfill such requirements, the next higher rating shall be used.

(b) Two or more extinguishers of lower rating, except for foam extinguishers, shall not be used to fulfill the protection requirements of Table L-2. Up to three foam extinguishers may be used to fulfill these requirements.

(c) The protection requirements may be fulfilled with extinguishers of higher ratings provided the travel distance to such larger extinguishers shall not exceed 50 feet.

(4) Fire extinguisher size and placement for Class B fires in flammable liquids of appreciable depth.

(a) For flammable liquid hazards of appreciable depth (Class B), such as in dip or quench tanks, Class B fire extinguishers shall be provided on the basis of one numerical unit of Class B extinguishing potential per square foot of flammable liquid surface of the largest tank hazard within the area.

Note: Appreciable depth is defined as a depth of a liquid greater than one-quarter inch.

(b) Two or more extinguishers of lower ratings except for foam extinguishers, shall not be used in lieu of the extinguisher required for the largest tank. Up to three foam extinguishers may be used to fulfill these requirements.

(c) Scattered or widely separated hazards shall be individually protected if the specified travel distances in (3)(a) and (b) of this section are exceeded. Likewise, extinguishers in the proximity of a hazard shall be carefully located so as to be accessible in the presence of a fire without undue danger to the operator.

(5) Fire extinguisher size and placement for Class C hazards.

(a) Extinguishers with Class C ratings shall be required where energized electrical equipment may be encountered which would require a nonconducting extinguishing media. This will include fire either directly involving or surrounding electrical equipment. Since the fire itself is a Class A or Class B hazard the extinguishers are sized and located on the basis of the anticipated Class A or B hazard.

[Order 73-5, § 296-24-59005, filed 5/9/73 and Order 73-4, § 296-24-59005, filed 5/7/73.]

WAC 296-24-59007 Inspection, maintenance, and hydrostatic tests. (1) General. (a) The owner or occupant of a property in which extinguishers are located shall be responsible for such inspection, maintenance, and testing.

Note: For details of conducting needed inspections, proper maintenance operations, and required test, see NFPA No. 10A-1970, Maintenance and Use of Portable Fire Extinguishers.

(2) Inspection.

(a) Extinguishers shall be inspected monthly, or at more frequent intervals when circumstances require, to insure they are in their designated places, to insure they have not been actuated or tampered with, and to detect any obvious physical damage, corrosion, or other impairments.

(b) Any extinguishers showing defects shall be given a complete maintenance check.

(3) Maintenance.

(a) At regular intervals, not more than 1 year apart, or when specifically indicated by an inspection, extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety; or replaced as needed.

(b) Extinguishers removed from the premises to be recharged shall be replaced by spare extinguishers during the period they are gone.

(c) Pails or drums of powder-extinguishing agents for scoop or shovel application to metal fires shall be kept full at all times.

(d) Each extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person who performs this service.

(4) Hydrostatic tests.

(a) If, at any time, an extinguisher shows evidence of corrosion or mechanical injury, it shall be subjected to a hydrostatic pressure test, or replaced.

(b) For evaluating the condition of extinguisher cylinders made to department of transportation specifications (cf.49 CFR chapter I), see the Standard for Visual Inspection of Compressed Gas Cylinders (CGA C-6), published by the Compressed Gas Association, 500 Fifth Avenue, New York, N.Y. 10036.

(c) At intervals not exceeding those specified in Table L-3 and WAC 296-24-59007 (4)(d), extinguishers shall be hydrostatically tested. The first hydrostatic retest may be conducted between the fifth and sixth years for those with a designated test interval of 5 years.

TABLE L-3

HYDROSTATIC TEST INTERVAL FOR EXTINGUISHERS

Extinguisher Type:	Test interval year
Soda-acid	5
Cartridge-operated water and/or antifreeze	5

TABLE L-3

HYDROSTATIC TEST INTERVAL FOR EXTINGUISHERS

Extinguisher Type:	Test interval year
Storage–pressure water and/or antifreeze	5
Wetting agent	5
Foam	5
Loaded stream	5
Dry chemical extinguishers with stainless steel shells, or soldered–brass shells	5
Carbon dioxide extinguishers	5
Dry chemical extinguishers with brazed–brass shells, or mild–steel shell, or aluminum shells	12
Bromotrifluoromethane	12
Dry powder extinguishers for metal fires	12

Note: Cylinders under jurisdiction of the U.S. Department of Transportation (formerly Interstate Commerce Commission) may require hydrostatic testing at more frequent periods.

(d) Nitrogen cylinders (or other cylinders used for inert–gas storage), such as found on wheeled extinguishers, shall be tested at a 5–year interval.

(e) On those extinguishers which are equipped with a shut–off nozzle at the outlet end of the hose, a hydrostatic test shall be performed on the hose with its couplings (but without the discharge nozzle) at the test interval specified for the unit on which the hose is installed.

(f) The test pressure for dry chemical and dry powder hose assemblies requiring a hydrostatic test shall be at a test pressure of 300 pounds per square inch for a 1–minute period. Carbon dioxide hose assemblies requiring a hydrostatic test shall be at test pressure of 1,250 p.s.i. for a 1–minute period.

(g) Hydrostatic tests are not required on fire pails, pump–type water and/or antifreeze extinguishers, and factory–sealed disposable (nonrefillable) containers. If such an extinguisher or water pail shows evidence of corrosion or mechanical injury, it may be unsafe or unsuitable for further use and shall be replaced with a new unit.

(h) The hydrostatic test date shall be recorded on a record tag of metal or equally durable material, or a suitable metallized decal which shall be affixed (by a heatless process) to the shell of an extinguisher which favorably passes the hydrostatic test. The record tag shall contain the following information: Date of test, test pressure, and name or initials of person or agency making the test.

(i) For extinguishers subjected to an original factory test pressure of 350 p.s.i. or greater, the test pressure shall be 75 percent of the factory test pressure (as noted on the extinguisher nameplate), but in no case less than 300 p.s.i., see Table L–4. For extinguishers subjected to an original factory test pressure of less than 350 p.s.i., the test pressure shall be 75 percent of the factory test pressure; see Table L–4. Pressure shall be applied at a rate of rise to reach the test pressure in approximately 1 minute, and the pressure shall be held for 1 minute, after which it shall be released.

TABLE L-4

HYDROSTATIC TEST PRESSURE REQUIREMENTS—NON-ICC SHELLS, SHELLS NOT SPECIFIED IN U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS, (FORMERLY INTERSTATE COMMERCE COMMISSION)

Extinguisher Type	Original factory test pressure	Requires hydrostatic test pressure
All dry chemical and dry powder.	400 p.s.i. or greater.	75% of factory test pressure.
	350–399 p.s.i.	300 p.s.i.
	below 350 p.s.i.	75% of factory test pressure.
Foam—500 p.s.i. factory test.	500	375.
Foam—350 p.s.i. factory test.	350	300.
Soda–acid—500 p.s.i. factory test.	500	375.
Stored–pressure or cartridge–operated water–type (including antifreeze and loaded–stream).	400 p.s.i. or greater.	75% of factory test pressure.
	350–399 p.s.i.	300 p.s.i.
	below 350.	75% of factory test pressure.

(j) Carbon dioxide extinguishers, nitrogen cylinders, and other cylinders or cartridges used for the storage of inert, compressed gases shall be hydrostatically tested in accordance with the requirements of the U.S. Department of Transportation (formerly Interstate Commerce Commission see 49 CFR October 1, 1972 Parts 171–190).

(k) Extinguisher shells, cartridges, or cylinders which show leakage or permanent distortion in excess of specified limits, or which rupture, shall be removed from service.

[Order 74-27, § 296-24-59007, filed 5/7/74; Order 73-5, § 296-24-59007, filed 5/9/73 and Order 73-4, § 296-24-59007, filed 5/7/73.]

WAC 296-24-592 Portable fire extinguishers. All sections of this chapter which include WAC 296–24–592 in the section number apply to portable fire extinguishers.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-592, filed 12/24/81.]

WAC 296-24-59201 Scope and application. The requirements of this section apply to the placement, use, maintenance, and testing of portable fire extinguishers provided for the use of employees. WAC 296–24–59207 does not apply to extinguishers provided for employee use on the outside of workplace buildings or structures. Where extinguishers are provided but are not intended for employee use and the employer has an emergency action plan and a fire prevention plan which meet the

requirements of WAC 296-24-567, then only the requirements of WAC 296-24-59209 and 296-24-59211 apply.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59201, filed 12/24/81.]

WAC 296-24-59203 Exemptions. (1) Where the employer has established and implemented a written fire safety policy which requires the immediate and total evacuation of employees from the workplace upon the sounding of a fire alarm signal and which includes an emergency action plan and a fire prevention plan which meet the requirements of WAC 296-24-567, and when extinguishers are not available in the workplace, the employer is exempt from all requirements of this section unless a specific standard in chapter 296-24 WAC requires that a portable fire extinguisher be provided.

(2) Where the employer has an emergency action plan meeting the requirements of WAC 296-24-567, which designates certain employees to be the only employees authorized to use the available portable fire extinguishers, and which requires all other employees in the fire area to immediately evacuate the affected work area upon the sounding of the fire alarm, the employer is exempt from the distribution requirements in WAC 296-24-59207.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59203, filed 12/24/81.]

WAC 296-24-59205 General requirements. (1) The employer shall provide portable fire extinguishers and shall mount, locate and identify them so that they are readily accessible to employees without subjecting the employees to possible injury.

(2) Only approved portable fire extinguishers shall be used to meet the requirements of this section.

(3) The employer shall not provide or make available in the workplace portable fire extinguishers using carbon tetrachloride or chlorobromomethane extinguishing agents.

(4) The employer shall assure that portable fire extinguishers are maintained in a fully charged and operable condition and kept in their designated places at all times except during use.

(5) The employer shall permanently remove from service by January 1, 1982, all soldered or riveted shell self-generating soda acid or self-generating foam or gas cartridge water type portable fire extinguishers which are operated by inverting the extinguisher to rupture the cartridge or to initiate an uncontrollable pressure generating chemical reaction to expel the agent.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59205, filed 12/24/81.]

WAC 296-24-59207 Selection and distribution. (1) Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of hazard which would affect their use.

(2) The employer shall distribute portable fire extinguishers for use by employees on Class A fires so that the travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.

(3) The employer may use uniformly spaced standpipe systems or hose stations connected to a sprinkler system installed for emergency use by employees instead of Class A portable fire extinguishers, provided that such systems meet the respective requirements of WAC 296-24-602 or 296-24-607, that they provide total coverage of the area to be protected, and that employees are trained at least annually in their use.

(4) The employer shall distribute portable fire extinguishers for use by employees on Class B fires so that the travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.

(5) The employer shall distribute portable fire extinguishers used for Class C hazards on the basis of the appropriate pattern for the existing Class A or Class B hazards.

(6) The employer shall distribute portable fire extinguishers or other containers of Class D extinguishing agent for use by employees so that the travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less. Portable fire extinguishers for Class D hazards are required in those combustible metal working areas where combustible metal powders, flakes, shavings, or similarly sized products are generated at least once every two weeks.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59207, filed 12/24/81.]

WAC 296-24-59209 Inspection, maintenance and testing. (1) The employer shall be responsible for the inspection, maintenance and testing of all portable fire extinguishers in the workplace.

(2) Portable extinguishers or hose used in lieu thereof under WAC 296-24-59207(3) shall be visually inspected monthly.

(3) The employer shall assure that portable fire extinguishers are subjected to an annual maintenance check. Stored pressure extinguishers do not require an internal examination. The employer shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less. The record shall be available to the director upon request.

(4) The employer shall assure that stored-pressure dry chemical extinguishers that require a twelve-year hydrostatic test are emptied and subjected to applicable maintenance procedures every six years. Dry chemical extinguishers having nonrefillable disposable containers are exempt from this requirement. When recharging or hydrostatic testing is performed, the six-year requirement begins from that date.

(5) The employer shall assure that alternate equivalent protection is provided when portable fire extinguishers are removed from service for maintenance and recharging.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59209, filed 12/24/81.]

WAC 296-24-59211 Hydrostatic testing. (1) The employer shall assure that hydrostatic testing is performed by trained persons with suitable testing equipment and facilities.

(2) The employer shall assure that portable extinguishers are hydrostatically tested at the intervals listed in Table I of this section, except under any of the following conditions:

(a) When the unit has been repaired by soldering, welding, brazing, or use of patching compounds;

(b) When the cylinder or shell threads are damaged;

TABLE I

Type of Extinguishers	Test Interval (Years)
Soda acid (soldered brass shells) (until January 1, 1982)	(1)
Soda acid (stainless steel shell)	5
Cartridge operated water and/or antifreeze	5
Stored pressure water and/or antifreeze	5
Wetting agent	5
Foam (soldered brass shells) (until January 1, 1982)	(1)
Foam (stainless steel shell)	5
Aqueous film forming form (AFFF)	5
Loaded stream	5
Dry chemical with stainless steel	5
Carbon dioxide	5
Dry chemical, stored pressure, with mild steel, brazed brass or aluminum shells	12
Dry chemical, cartridge or cylinder operated, with mild steel shells	12
Halon 1211	12
Halon 1301	12
Dry powder, cartridge or cylinder operated, with mild steel shell	12

(1) Extinguishers having shells constructed of copper or brass joined by soft solder or rivets shall not be hydrostatically tested and shall be removed from service by January 1, 1982. (Not permitted.)

(c) When there is corrosion that has caused pitting, including corrosion under removable name plate assemblies;

(d) When the extinguisher has been burned in a fire; or

(e) When a calcium chloride extinguishing agent has been used in a stainless steel shell.

(3) In addition to an external visual examination, the employer shall assure that an internal examination of cylinders and shells to be tested is made prior to the hydrostatic tests.

(4) The employer shall assure that portable fire extinguishers are hydrostatically tested whenever they show new evidence of corrosion or mechanical injury, except under the conditions listed in subsection (2)(a) through (e) of this section.

(5) The employer shall assure that hydrostatic tests are performed on extinguisher hose assemblies which are equipped with a shut–off nozzle at the discharge end of the hose. The test interval shall be the same as specified for the extinguisher on which the hose is installed.

(6) The employer shall assure that carbon dioxide hose assemblies with a shut–off nozzle are hydrostatically tested at 1,250 psi (8,620 kPa).

(7) The employer shall assure that dry chemical and dry powder hose assemblies with a shut–off nozzle are hydrostatically tested at 300 psi (2,070 kPa).

(8) Hose assemblies passing a hydrostatic test do not require any type of recording or stamping.

(9) The employer shall assure that hose assemblies for carbon dioxide extinguishers that require a hydrostatic test are tested within a protective cage device.

(10) The employer shall assure that carbon dioxide extinguishers and nitrogen or carbon dioxide cylinders used with wheeled extinguishers are tested every five years at 5/3 of the service pressure as stamped into the cylinder. Nitrogen cylinders which comply with DOT 173.39(e)(15) may be hydrostatically tested every ten years.

(11) The employer shall assure that all stored pressure and Halon 1211 types of extinguishers are hydrostatically tested at the factory test pressure not to exceed two times the service pressure.

(12) The employer shall assure that acceptable self–generating type soda acid and foam extinguishers are tested at 350 psi (2,410 kPa).

(13) Air or gas pressure may not be for hydrostatic testing.

(14) Extinguisher shells, cylinders, or cartridges which fail a hydrostatic pressure test, or which are not fit for testing shall be removed from service and from the workplace.

(15)(a) The equipment for testing compressed gas type cylinders shall be of the water–jacket type. The equipment shall be provided with an expansion indicator which operates with an accuracy within one percent of the total expansion or 0.1 cc of liquid.

(b) The equipment for testing noncompressed gas type cylinders shall consist of the following:

(i) A hydrostatic test pump, hand or power operated, capable of producing not less than one hundred fifty percent of the test pressure, which shall include appropriate check valves and fittings;

(ii) A flexible connection for attachment to fittings to test through the extinguisher nozzle, test bonnet, or hose outlet, as is applicable; and

(iii) A protective cage or barrier for personal protection of the tester, designed to provide visual observation of the extinguisher under test.

(16) The employer shall maintain and provide upon request to the director evidence that the required hydrostatic testing of fire extinguishers has been performed at the time intervals shown in Table I. Such evidence shall include the date of test, the test pressure used, and the person or agency performing the test. Such records shall be kept until the extinguisher is hydrostatically retested at the time interval specified in Table I, or until the extinguisher is taken out of service, whichever is less.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59211, filed 12/24/81.]

WAC 296-24-59213 Training and education. (1) Where the employer has provided portable fire extinguishers for employee use in the workplace, the employer shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

(2) The employer shall provide the education required in subsection (1) of this section upon initial employment and at least annually thereafter.

(3) The employer shall provide employees who have been designated to use fire fighting equipment as part of an emergency action plan with training in the use of the appropriate equipment.

(4) The employer shall provide the training required in subsection (3) of this section upon initial assignment to the designated group of employees and at least annually thereafter.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59213, filed 12/24/81.]

WAC 296-24-59215 Appendix A--Portable fire extinguishers. (1) Scope and application. The scope and application of this section is written to apply to three basic types of workplaces. First, there are those workplaces where the employer has chosen to evacuate all employees from the workplace at the time of a fire emergency. Second, there are those workplaces where the employer has chosen to permit certain employees to fight fires and to evacuate all other nonessential employees at the time of a fire emergency. Third, there are those workplaces where the employer has chosen to permit all employees in the workplace to use portable fire extinguishers to fight fires.

The section also addresses two kinds of work areas. The entire workplace can be divided into outside (exterior) work areas and inside (interior) work areas. This division of the workplace into two areas is done in recognition of the different types of hazards employees may be exposed to during fire fighting operations. Fires in interior workplaces, pose a greater hazard to employees; they can produce greater exposure to quantities of smoke, toxic gases, and heat because of the capability of a building or structure to contain or entrap these products of combustion until the building can be ventilated. Exterior work areas, normally open to the environment, are somewhat less hazardous, because the products of combustion are generally carried away by the thermal column of the fire. Employees also have a greater selection of evacuation routes if it is necessary to abandon fire fighting efforts.

In recognition of the degree of hazard present in the two types of work areas, the standards for exterior work areas are somewhat less restrictive in regards to extinguisher distribution. WAC 296-24-59201 explains this by specifying which paragraphs in the section apply.

(2) Portable fire extinguisher exemptions. In recognition of the three options given to employers in regard to the amount of employee evacuation to be carried out, the standards permit certain exemptions based on the number of employees expected to use fire extinguishers.

Where the employer has chosen to totally evacuate the workplace at the time of a fire emergency and when fire extinguishers are not provided, the requirements of this section do not apply to that workplace.

Where the employer has chosen to partially evacuate the workplace or the effected area at the time of a fire emergency and has permitted certain designated employees to remain behind to operate critical plant operations or to fight fires with extinguishers, then the employer is exempt from the distribution requirements of this section. Employees who will be remaining behind to perform incipient fire fighting or members of a fire brigade must be trained in their duties. The training must result in the employees becoming familiar with the locations of fire extinguishers. Therefore, the employer must locate the extinguishers in convenient locations where the employees know they can be found. For example, they could be mounted in the fire truck or cart that the fire brigade uses when it responds to a fire emergency. They can also be distributed as set forth in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

Where the employer has decided to permit all employees in the workplace to use fire extinguishers, then the entire WISHA standard applies.

(3) Portable fire extinguisher mounting. Previous standards for mounting fire extinguishers have been criticized for requiring specific mounting locations. In recognition of this criticism, the standard has been rewritten to permit as much flexibility in extinguisher mounting as is acceptable to assure that fire extinguishers are available when needed and that employees are not subjected to injury hazards when they try to obtain an extinguisher.

It is the intent of WISHA to permit the mounting of extinguishers in any location that is accessible to employees without the use of portable devices such as a ladder. This limitation is necessary because portable devices can be moved or taken from the place where they are needed and, therefore, might not be available at the time of an emergency.

Employers are given as much flexibility as possible to assure that employees can obtain extinguishers as fast as possible. For example, an acceptable method of mounting extinguishers in areas where fork lift trucks or tow-motors are used is to mount the units on retractable board which, by means of counterweighting, can be raised above the level where they could be struck by vehicular traffic. When needed, they can be lowered quickly for use. This method of mounting can also reduce vandalism and unauthorized use of extinguishers. The extinguishers may also be mounted as outlined in the National Fire Protection Association's Standard No. 10, "Portable Fire Extinguishers."

(4) Selection and distribution. The employer is responsible for the proper selection and distribution of fire extinguishers and the determination of the necessary degree of protection. The selection and distribution of fire

extinguishers must reflect the type and class of fire hazards associated with a particular workplace.

Extinguishers for protecting Class A hazards may be selected from the following types: Water, foam, loaded stream, or multipurpose dry chemical. Extinguishers for protecting Class B hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, dry chemicals, foam, or loaded stream. Extinguishers for Class C hazards may be selected from the following types: Halon 1301, Halon 1211, carbon dioxide, or dry chemical.

Combustible metal (Class D hazards) fires pose a different type of fire problem in the workplace. Extinguishers using water, gas, or certain dry chemicals cannot extinguish or control this type of fire. Therefore, certain metals have specific dry powder extinguishing agents which can extinguish or control this type of fire. Those agents which have been specifically approved for use on certain metal fires provide the best protection; however, there are also some "universal" type agents which can be used effectively on a variety of combustible metal fires if necessary. The "universal" type agents include: Foundry flux, Lith-X powder, TMB liquid, pyromet powder, TEC powder, dry talc, dry graphite powder, dry sand, dry sodium chloride, dry soda ash, lithium chloride, zirconium silicate, and dry dolomite.

Water is not generally accepted as an effective extinguishing agent for metal fires. When applied to hot burning metal, water will break down into its basic atoms of oxygen and hydrogen. This chemical breakdown contributes to the combustion of the metal. However, water is also a good universal coolant and can be used on some combustible metals, but only under proper conditions and application, to reduce the temperature of the burning metal below the ignition point. For example, automatic deluge systems in magnesium plants can discharge such large quantities of water on burning magnesium that the fire will be extinguished. The National Fire Protection Association has specific standards for this type of automatic sprinkler system. Further information on the control of metal fires with water can be found in the National Fire Protection Association's *Fire Protection Handbook.*

An excellent source of selection and distribution criteria is found in the National Fire Protection Association's Standard No. 10. Other sources of information include the National Safety Council and the employer's fire insurance carrier.

(5) Substitution of standpipe systems for portable fire extinguishers. The employer is permitted to substitute acceptable standpipe systems for portable fire extinguishers under certain circumstances. It is necessary to assure that any substitution will provide the same coverage that portable units provide. This means that fire hoses, because of their limited portability, must be spaced throughout the protected area so that they can reach around obstructions such as columns, machinery, etc., and so that they can reach into closets and other enclosed areas.

(6) Inspection, maintenance and testing. The ultimate responsibility for the inspection, maintenance and testing of portable fire extinguishers lies with the employer. The actual inspection, maintenance, and testing may, however, be conducted by outside contractors with whom the employer has arranged to do the work. When contracting for such work, the employer should assure that the contractor is capable of performing the work that is needed to comply with this standard.

If the employer should elect to perform the inspection, maintenance, and testing requirements of this section in-house, then the employer must make sure that those persons doing the work have been trained to do the work and to recognize problem areas which could cause an extinguisher to be inoperable. The National Fire Protection Association provides excellent guidelines in its standard for portable fire extinguishers. The employer may also check with the manufacturer of the unit that has been purchased and obtain guidelines on inspection, maintenance, and testing. Hydrostatic testing is a process that should be left to contractors or individuals using suitable facilities and having the training necessary to perform the work.

Any time the employer has removed an extinguisher from service to be checked or repaired, alternate equivalent protection must be provided. Alternate equivalent protection could include replacing the extinguisher with one or more units having equivalent or equal ratings, posting a fire watch, restricting the unprotected area from employee exposure, or providing a hose system ready to operate.

(7) Hydrostatic testing. As stated before, the employer may contract for hydrostatic testing. However, if the employer wishes to provide the testing service, certain equipment and facilities must be available. Employees should be made aware of the hazards associated with hydrostatic testing and the importance of using proper guards and water pressures. Severe injury can result if extinguisher shells fail violently under hydrostatic pressure.

Employers are encouraged to use contractors who can perform adequate and reliable service. Firms which have been certified by the Materials Transportation Board (MTB) of the United States Department of Transportation (DOT), or state licensed extinguisher servicing firms, or recognized by the National Association of Fire Equipment Distributors in Chicago, Illinois, are generally acceptable for performing this service.

(8) Training and education. This part of the standard is of the utmost importance to employers and employees if the risk of injury or death due to extinguisher use is to be reduced. If an employer is going to permit an employee to fight a workplace fire of any size, the employer must make sure that the employee knows everything necessary to assure the employee's safety.

Training and education can be obtained through many channels. Often, local fire departments in larger cities have fire prevention bureaus or similar organizations which can provide basic fire prevention training programs. Fire insurance companies will have data and information available. The National Fire Protection

Association and the National Safety Council will provide, at a small cost, publications that can be used in a fire prevention program.

Actual fire fighting training can be obtained from various sources in the country. The Texas A and M University, the University of Maryland's Fire and Rescue Institute, West Virginia University's Fire Service Extension, Iowa State University's Fire Service Extension and other state training schools and land grant colleges have fire fighting programs directed to industrial applications. Some manufacturers of extinguishers, such as the Ansul Company and Safety First, conduct fire schools for customers in the proper use of extinguishers. Several large corporations have taken time to develop their own on-site training programs which expose employees to the actual "feeling" of fire fighting. Simulated fires for training of employees in the proper use of extinguishers are also an acceptable part of a training program.

In meeting the requirements of this section, the employer may also provide educational materials, without classroom instruction, through the use of employee notice campaigns using instruction sheets or flyers or similar types of informal programs. The employer must make sure that employees are trained and educated to recognize not only what type of fire is being fought and how to fight it, but also when it is time to get away from it and leave fire suppression to more experienced fire fighters.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-59215, filed 12/24/81.]

WAC 296-24-600 Standpipe and hose systems.

[Order 73-5, § 296-24-600, filed 5/9/73 and Order 73-4, § 296-24-600, filed 5/7/73.]

WAC 296-24-60001 General requirements. (1) Application. Where standpipe and hose systems are provided they shall meet the design requirements of the National Fire Protection Association's Standard for the Installation of Standpipe and Hose Systems NFPA 14-1970 and the requirements of WAC 296-24-60001 through 296-24-60007.

(2) Closets and cabinets. Closets and cabinets used to contain fire hose shall be of sufficient size to permit the installation of the necessary equipment at hose stations, and so designed as not to interfere with the prompt handling of the hose and equipment at time of fire. They shall be used for fire equipment only.

(3) Protection of standpipes. Standpipes shall be so located that they are protected against mechanical and fire damage.

[Order 73-5, § 296-24-60001, filed 5/9/73 and Order 73-4, § 296-24-60001, filed 5/7/73.]

WAC 296-24-60003 Hose outlets. (1) Location of hose.

(a) Hose outlets shall be within easy reach of a person standing on the floor and in no case shall be over 6 feet from the floor. Hose stations shall be located conspicuously within the immediate area and where not likely to be obstructed. Hose may be located at one side of the standpipe and supplied by short lateral connections to the standpipe where necessary to avoid obstructions.

(b) For Class III service, the outlets for large hose shall be located in a stairway enclosure, and for small hose the outlets shall be located in the corridor or space adjacent to the stairway enclosure.

(2) Hose connections.

(a) Standpipes for Class I service shall be provided with 2 1/2-inch hose connections on each floor.

(b) Standpipes for Class II service shall be provided with 1 1/2-inch hose connections on each floor.

(c) Standpipes for Class III service shall be provided with both a 2 1/2-inch and 1 1/2-inch hose connection on each floor. The hose connections may be through one 2 1/2-inch hose valve and an easily removable 2 1/2-inch by 1 1/2-inch adapter.

(3) Hose. Each hose outlet provided for the use of building occupants (Class II and III services) shall be equipped with approved small fire hose attached and ready for use. The maximum total length of unlined hose shall be 75 feet. The maximum total length of lined hose shall be 100 feet.

(4) Hose racks or reels. Each station provided with small hose shall be equipped with an approved rack, or an approved reel, securely fastened in position; provided, that an employer may continue to use a reel acquired prior to May 20, 1974, even though it is not approved, so long as it is in good working condition.

(5) Hose valves.

(a) An approved hose valve shall be provided at each outlet for attachment of hose.

(b) Where the static pressure at any standpipe outlet for small hose exceeds 100 pounds per square inch, an approved device shall be installed at the outlet to reduce the pressure so that the nozzle pressure will be approximately 80 pounds per square inch.

Note: Pressure reducers are not required on standpipe outlets for 2 1/2-inch hose because it is assumed 2 1/2-inch hose will be attached only when the persons likely to use it are trained in handling large streams.

(c) National (American) Standard Fire Hose Coupling Screw Threads shall be used whenever they will fit existing equipment; (see Standard for Screw Threads Gaskets for Fire Hose Couplings, NFPA No. 194-1968).

(6) Nozzles. Nozzles shall be of an approved type. Size of nozzles for small hose shall be not larger than one-half inch.

(7) Dry standpipe identification. Each hose connection on dry standpipes shall be provided with a conspicuous, durable, and permanently legible sign reading "dry standpipe for fire department use only."

[Order 74-27, § 296-24-60003, filed 5/7/74; Order 73-5, § 296-24-60003, filed 5/9/73 and Order 73-4, § 296-24-60003, filed 5/7/73.]

WAC 296-24-60005 Water supplies. (1) Minimum supply for Class I service.

(a) The minimum supply for Class I service shall be sufficient to provide 500 gallons per minute for a period of at least thirty minutes.

(b) Where more than one standpipe is required, the minimum supply shall be 500 gallons per minute for the first standpipe and 250 gallons per minute for each additional standpipe, the total supply not to exceed 2,500 gallons a minute, for a period of at least thirty minutes.

(c) The supply shall be sufficient to maintain a residual pressure of 65 pounds per square inch at the topmost outlet of each standpipe (including the roof outlet) with 500 gallons per minute flowing.

(2) Minimum supply for Class II service. The minimum supply for Class II service shall be sufficient to provide 100 gallons per minute for a period of at least thirty minutes. The supply shall be sufficient to maintain a residual pressure of 65 pounds per square inch at the topmost outlet of each standpipe (including the roof outlet) with 100 gallons per minute flowing.

(3) Minimum supply for Class III service. The minimum supply for Class III service shall be the same as for Class I service.

(4) Fire department connections.

(a) One or more fire department connections shall be provided for each Class I or Class III standpipe system.

(b) In high-rise buildings having two or more zones, a fire department connection shall be provided for each zone.

(c) Fire department connections shall be properly supported.

(d) There shall be no shutoff valve in the fire department connection.

(e) An approved straightway check valve shall be installed in each fire department connection, located as near as practicable to the point where it joins the system.

(f) The pipe between the check valve and the outside hose coupling shall be equipped with an approved automatic drip, arranged to discharge to a proper place.

(g) Hose connections shall be approved type and shall be equipped with standard caps, properly secured and arranged for easy removal by fire departments.

(h) Hose coupling threads shall conform to those used by the local fire department. (American) National Standard Fire-Hose Coupling Screw Threads shall be used whenever they will fit the local fire department hose threads; (see Standard for Screw Threads and Gaskets for Fire Hose Couplings, NFPA No. 194-1968).

(i) Hose connections should be on the street side of buildings and shall be located and arranged so that hose lines can be readily and conveniently attached to the inlets without interference from any nearby objects including buildings, fences, posts, or other fire department connections.

(j) Hose connections shall be designated by a sign having raised letters at least one inch in size cast on a plate or fitting, reading "standpipe."

(k) If hose connection does not serve all of the building an appropriate and durable sign shall be attached indicating the portions of the building served.

[Order 73-5, § 296-24-60005, filed 5/9/73 and Order 73-4, § 296-24-60005, filed 5/7/73.]

WAC 296-24-60007 Tests and maintenance. (1) Tests. All new systems including yard piping shall be tested hydrostatically at not less than 200 pounds per square inch pressure for 2 hours, or at 50 pounds per square inch in excess of the normal pressure when the normal pressure is in excess of 150 pounds per square inch.

(2) Periodic inspection.

(a) The tanks shall be kept properly filled, and where pressure tanks are employed, a pressure of at least 75 pounds per square inch shall be maintained at all times.

Note: For further details, see Standard for Water Tanks for Private Fire Protection, NFPA No. 22-1971.

(b) The valves in the main connection to the automatic sources of water supply shall be open at all times. The hose valves should be frequently examined to see that they are tight.

Note: For further details, see Care of Fire Hose, NFPA No. 198-1972.

[Order 73-5, § 296-24-60007, filed 5/9/73 and Order 73-4, § 296-24-60007, filed 5/7/73.]

WAC 296-24-602 Standpipe and hose systems. This section establishes design and installation criteria for standpipe systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-602, filed 12/24/81.]

WAC 296-24-60201 Scope and application. (1) Scope. This section applies to all small hose, Class II and Class III standpipe systems installed to meet the requirements of a particular WISHA standard.

(2) Exception. This section does not apply to Class I standpipe systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60201, filed 12/24/81.]

WAC 296-24-60203 Protection of standpipes. The employer shall assure that standpipes are located or otherwise protected against mechanical damage. Damaged standpipes shall be repaired promptly.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60203, filed 12/24/81.]

WAC 296-24-60205 Equipment. (1) Reels and cabinets. Where reels or cabinets are provided to contain fire hose, the employer shall assure that they are designed to facilitate prompt use of the hose valves, the hose, and other equipment at the time of a fire or other emergency. The employer shall assure that the reels and cabinets are conspicuously identified and used only for fire equipment.

(2) Hose outlets and connections.

(a) The employer shall assure that hose outlets and connections are located high enough above the floor to avoid being obstructed and to be accessible to employees.

(b) The employer shall standardize screw threads or provide appropriate adapters throughout the system and assure that the hose connections are compatible with those used on the supporting fire equipment.

(3) Hose.

(a) The employer shall assure that every one and one-half inch (3.8 cm) or smaller hose outlet used to meet this standard is equipped with hose connected and ready for use. In extremely cold climates where such installation may result in damaged equipment, the hose may be stored in another location provided it is readily available and can be connected when needed.

(b) Standpipe systems installed after July 1, 1982, for use by employees, shall be equipped with lined hose. Unlined hose may remain in use on existing systems. However, after the effective date of this standard, unlined hose which becomes unserviceable shall be replaced with lined hose.

(c) Beginning July 1, 1982, the employer shall provide hose of such length that friction loss resulting from water flowing through the hose will not decrease the pressure at the nozzle below 30 psi (210 kPa). The dynamic pressure at the nozzle shall be within the range of 30 psi (210 kPa) to 125 psi (860 kPa).

(4) Nozzles. Beginning July 1, 1982, the employer shall assure that standpipe hose is equipped with shut-off type nozzles.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60205, filed 12/24/81.]

WAC 296-24-60207 Water supply. The minimum water supply for standpipe and hose systems, which are provided for the use of employees, shall be sufficient to provide 100 gallons per minute (6.3 l/s) for a period of at least thirty minutes.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60207, filed 12/24/81.]

WAC 296-24-60209 Tests and maintenance. (1) Acceptance tests.

(a) The employer shall assure that the piping of Class II and Class III systems installed after July 1, 1982, including yard piping, is hydrostatically tested for a period of at least two hours at not less than 200 psi (1,380 kPa), or at least 50 psi (340 kPa) in excess of normal pressure when such pressure is greater than 150 psi (1,030 kPa).

(b) The employer shall assure that hose on all standpipe systems installed after July 1, 1982, is hydrostatically tested with couplings in place, at a pressure of not less than 200 psi (1,380 kPa), before it is placed in service. This pressure shall be maintained for at least fifteen seconds and not more than one minute during which time the hose shall not leak nor shall any jacket thread break during the test.

(2) Maintenance.

(a) The employer shall assure that water supply tanks are kept filled to the proper level except during repairs. When pressure tanks are used, the employer shall assure that proper pressure is maintained at all times except during repairs.

(b) The employer shall assure that valves in the main piping connections to the automatic sources of water supply are kept fully open at all times except during repair.

(c) The employer shall assure that hose systems are inspected at least annually and after each use to assure that all of the equipment and hose are in place, available for use, and in serviceable condition.

(d) When the system or any portion thereof is found not to be serviceable, the employer shall remove it from service immediately and replace it with equivalent protection such as extinguishers and fire watches.

(e) The employer shall assure that hemp or linen hose on existing systems is unracked, physically inspected for deterioration, and reracked using a different fold pattern at least annually. The employer shall assure that defective hose is replaced in accordance with WAC 296-24-60205 (3)(b).

(f) The employer shall designate trained persons to conduct all inspections required under this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60209, filed 12/24/81.]

WAC 296-24-60299 Appendix A--Standpipe and hose systems. (1) Scope and application. This section has been written to provide adequate coverage of those standpipe and hose systems that an employer may install in the workplace to meet the requirements of a particular WISHA standard. For example, WISHA permits the substitution of hose systems for portable fire extinguishers in WAC 296-24-592. If an employer chooses to provide hose systems instead of portable Class A fire extinguishers, then those hose systems used for substitution would have to meet the applicable requirements of WAC 296-24-592. All other standpipe and hose systems not used as a substitute would be exempt from these requirements.

The section specifically exempts Class I large hose systems. By large hose systems, WISHA means those two and one-half inch hose lines that are usually associated with fire departments of the size that provide their own water supply through fire apparatus. When the fire gets to the size that outside protection of that degree is necessary, WISHA believes that in most industries employees will have been evacuated from the fire area and the "professional" fire fighters will take control.

(2) Protection of standpipes. Employers must make sure that standpipes are protected so that they can be relied upon during a fire emergency. This means protecting the pipes from mechanical and physical damage. There are various means for protecting the equipment such as, but not limited to, enclosing the supply piping in the construction of the building, locating the standpipe in an area which is inaccessible to vehicles, or locating the standpipe in a stairwell.

(3) Hose covers and cabinets. The employer should keep fire protection hose equipment in cabinets or inside protective covers which will protect it from the weather elements, dirt or other damaging sources. The use of protective covers must be easily removed or opened to assure that hose and nozzle are accessible. When the employer places hose in a cabinet, the employer must make sure that the hose and nozzle are accessible to employees without subjecting them to injury. In order to make sure that the equipment is readily accessible, the

employer must also make sure that the cabinets used to store equipment are kept free of obstructions and other equipment which may interfere with the fast distribution of the fire hose stored in the cabinet.

(4) Hose outlets and connections. The employer must assure that employees who use standpipe and hose systems can reach the hose rack and hose valve without the use of portable equipment such as ladders. Hose reels are encouraged for use because one employee can retrieve the hose, charge it, and place it into service without much difficulty.

(5) Hose. When the employer elects to provide small hose in lieu of portable fire extinguishers, those hose stations being used for the substitution must have hose attached and ready for service. However, if more than the necessary amount of small hose outlets are provided, hose does not have to be attached to those outlets that would provide redundant coverage. Further, where the installation of hose on outlets may expose the hose to extremely cold climates, the employer may store the hose in houses or similar protective areas and connect it to the outlet when needed.

There is approved lined hose available that can be used to replace unlined hose which is stored on racks in cabinets. The lined hose is constructed so that it can be folded and placed in cabinets in the same manner as unlined hose.

Hose is considered to be unserviceable when it deteriorates to the extent that it can no longer carry water at the required pressure and flow rates. Dry rotted linen or hemp hose, cross threaded couplings, and punctured hose are examples of unserviceable hose.

(6) Nozzles. Variable stream nozzles can provide useful variations in water flow and spray patterns during fire fighting operations and they are recommended for employee use. It is recommended that 100 psi nozzle pressure be used to provide good flow patterns for variable stream nozzles. The most desirable attribute for nozzles is the ability of the nozzle person to shut off the water flow at the nozzle when it is necessary. This can be accomplished in many ways. For example, a shut–off nozzle with a lever or rotation of the nozzle to stop flow would be effective, but in other cases a simple globe valve placed between a straight stream nozzle and the hose could serve the same purpose. For straight stream nozzles, 50 psi nozzle pressure is recommended. The intent of the standard is to protect the employee from "run–away" hoses if it becomes necessary to drop a pressurized hose line and retreat from the fire front and other related hazards.

(7) Design and installation. Standpipe and hose systems designed and installed in accordance with NFPA Standard No. 14–1976, "Standpipe and Hose Systems," are considered to be in compliance with this standard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60299, filed 12/24/81.]

WAC 296–24–605 Fixed fire suppression equipment—Automatic sprinkler systems.

[Order 73–5, § 296–24–605, filed 5/9/73 and Order 73–4, § 296–24–605, filed 5/7/73.]

WAC 296–24–60501 General requirements. (1) Design. When automatic sprinkler systems are provided they shall meet design requirements of the National Fire Protection Association's Standard for the Installation of Sprinkler Systems NFPA No. 13–1969 and the requirements of WAC 296–24–605 through 296–24–60509.

(2) Water supply. Every automatic sprinkler system shall have at least one automatic water supply of adequate pressure, capacity and reliability.

(3) Fire department connection. A connection through which a fire department can pump water into the sprinkler system makes a desirable auxiliary supply. For this purpose, one or more fire department connections shall be provided in all cases.

[Order 73–5, § 296–24–60501, filed 5/9/73 and Order 73–4, § 296–24–60501, filed 5/7/73.]

WAC 296–24–60503 Fire department connections. (1) Size. Pipe size shall not be less than 4 inches for fire engine connections and not less than 6 inches for fireboat connections, except that 3–inch pipe may be used to connect a single hose connection to a 3–inch or smaller riser.

(2) Valves.

(a) An approved straightaway check valve shall be installed in each fire department connection, located as near as practicable to the point where it joins the system.

(b) There shall be no shutoff valve in the fire department connection.

(3) Support. Fire department connections shall be properly supported.

(4) Hose connections.

(a) Hose connections shall be of approved type.

(b) Hose coupling threads shall conform to those used by the local fire department. National (American) Standard Fire Hose Coupling Screw Threads shall be used whenever they will fit the local fire department hose.

(c) Hose connections shall be equipped with caps, properly secured and arranged for easy removal by fire departments.

(d) Hose connections shall be located and arranged so that hose lines can be readily and conveniently attached to the inlets without interference from any nearby objects including buildings, fences, posts, or other fire department connections.

(e) Hose connections shall be designated by a sign having raised letters at least 1 inch in size cast on plate or fitting reading for service designated: Viz—"AUTO–SPKR." or "OPEN SPKR."

[Order 73–5, § 296–24–60503, filed 5/9/73 and Order 73–4, § 296–24–60503, filed 5/7/73.]

WAC 296–24–60505 Sprinkler alarms. (1) General.

(a) Waterflow alarms shall be provided on all sprinkler installations.

(b) An alarm unit shall include an approved mechanical alarm, horn, or siren, or an approved weatherproof electric gong, bell, horn, or siren on the outside of the

building or approved electric gongs, bells, horns, or sirens inside the building, or a combination of such devices.

(c) All alarm apparatus shall be so located and installed that all parts are readily accessible for inspection, removal, and repair, and shall be substantially supported. Outdoor mechanical or electrically operated bells shall be of weatherproof and guarded type. On each alarm check valve used under conditions of variable water pressure, a retarding device shall be installed. Suitable valves shall be provided in the connections to retarding chambers, to permit repair or removal without shutting off sprinkler; these valves shall be so arranged that they may be locked or sealed in the open position.

(2) Waterflow detecting devices.

(a) The alarm apparatus for a wet–pipe system shall consist of an approved alarm check valve or other approved water flow detecting alarm device with the necessary attachments required to give an alarm.

(b) The alarm apparatus for a dry–pipe system shall consist of approved alarm attachments to the dry–pipe valve. When a dry–pipe valve is located on the system side of an alarm valve, the actuating device of the alarms for the dry–pipe valve may be connected to the alarms on the wet–pipe system.

(c) The alarm apparatus for preaction and deluge systems shall consist of approved electric alarm attachments, actuated by a thermostatic system independently of flow of water in the system.

(3) Drains. Drains from alarm devices shall be so arranged that there will be no danger of freezing, and so that there will be no overflowing at the alarm apparatus, at domestic connections or elsewhere with the sprinkler drains wide open and under pressure.

[Order 73–5, § 296–24–60505, filed 5/9/73 and Order 73–4, § 296–24–60505, filed 5/7/73.]

WAC 296–24–60507 Maintenance of sprinkler system. A sprinkler system installed under this Standard shall be properly maintained for efficient service. The employer is responsible for the condition of his sprinkler system and must use due diligence in keeping the system in good operating condition.

[Order 76–6, § 296–24–60507, filed 3/1/76; Order 73–5, § 296–24–60507, filed 5/9/73 and Order 73–4, § 296–24–60507, filed 5/7/73.]

WAC 296–24–60509 Sprinkler head clearance. (1) Type I storage. Clearance of at least 36 inches shall be maintained between sprinkler deflectors and top of storage to reduce the possibility of obstruction to the distribution of water.

(2) Type II storage. Clearance of at least 18 inches shall be maintained between sprinkler deflectors and top of storage to reduce the possibility of obstruction to the distribution of water.

(3) Type III storage. In sprinklered buildings, at least 18 inches clearance between sprinkler deflectors and top of storage shall be maintained.

[Order 73–5, § 296–24–60509, filed 5/9/73 and Order 73–4, § 296–24–60509, filed 5/7/73.]

WAC 296–24–607 Automatic sprinkler systems. The design and installation criteria for automatic sprinkler systems is contained in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–607, filed 12/24/81.]

WAC 296–24–60701 Scope and application. (1) The requirements of this section apply to all automatic sprinkler systems installed to meet a particular WISHA standard.

(2) For automatic sprinkler systems used to meet WISHA requirements and installed prior to the effective date of this standard, compliance with the National Fire Protection Association (NFPA) or the National Board of Fire Underwriters (NBFU) standard in effect at the time of the system's installation will be acceptable as compliance with this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60701, filed 12/24/81.]

WAC 296–24–60703 Exemptions. Automatic sprinkler systems installed in workplaces, but not required by WISHA are exempt from the requirements of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–60703, filed 12/24/81.]

WAC 296–24–60705 General requirements. (1) Design.

(a) All automatic sprinkler designs used to comply with this standard shall provide the necessary discharge patterns, densities, and water flow characteristics for complete coverage in a particular workplace or zoned subdivision of the workplace.

(b) The employer shall assure that only approved equipment and devices are used in the design and installation of automatic sprinkler systems used to comply with this standard.

(2) Maintenance. The employer shall properly maintain an automatic sprinkler system installed to comply with this section. The employer shall assure that a main drain flow test is performed on each system annually. The inspector's test valve shall be opened at least every two years to assure that the sprinkler system operates properly.

(3) Acceptance tests. The employer shall conduct proper acceptance tests on sprinkler systems installed for employee protection after July 1, 1982, and record the dates of such tests. Proper acceptance tests include the following:

(a) Flushing of underground connections;

(b) Hydrostatic tests of piping in system;

(c) Air tests in dry–pipe systems;

(d) Dry–pipe valve operation; and

(e) Test of drainage facilities.

(4) Water supplies. The employer shall assure that every automatic sprinkler system is provided with at least one automatic water supply capable of providing

design water flow for at least thirty minutes. An auxiliary water supply or equivalent protection shall be provided when the automatic water supply is out of service, except for systems of twenty or fewer sprinklers.

(5) Hose connections for fire fighting use. The employer may attach hose connections for fire fighting use to wet pipe sprinkler systems provided that the water supply satisfies the combined design demand for sprinklers and standpipes.

(6) Protection of piping. The employer shall assure that automatic sprinkler system piping is protected against freezing and exterior surface corrosions.

(7) Drainage. The employer shall assure that all dry sprinkler pipes and fittings are installed so that the systems may be totally drained.

(8) Sprinklers.

(a) The employer shall assure that only approved sprinklers are used on systems.

(b) The employer may not use older style sprinklers to replace standard sprinklers without a complete engineering review of the altered part of the system.

(c) The employer shall assure that sprinklers are protected from mechanical damage.

(9) Sprinkler alarms. On all sprinkler systems having more than twenty sprinklers, the employer shall assure that a local water–flow alarm is provided which sounds an audible signal on the premises upon water flow through the system equal to the flow from a single sprinkler.

(10) Sprinkler spacing. The employer shall assure that sprinklers are spaced to provide a maximum protection area per sprinkler, a minimum of interference to the discharge pattern by building or structural members or building contents and suitable sensitivity to possible fire hazards. The minimum vertical clearance between sprinklers and material below shall be eighteen inches.

(11) Hydraulically designed systems. The employer shall assure that hydraulically designed automatic sprinkler systems or portions thereof are identified and that the location, number of sprinklers in the hydraulically designed section, and the basis of the design is indicated. Central records may be used in lieu of signs at sprinkler valves provided the records are available for inspection and copying by the director.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60705, filed 12/24/81.]

WAC 296-24-60799 Appendix A--Automatic sprinkler systems. (1) Scope and application. This section contains the minimum requirements for design, installation and maintenance of sprinkler systems that are needed for employee safety. The occupational safety and health administration is aware of the fact that the National Board of Fire Underwriters is no longer an active organization, however, sprinkler systems still exist that were designed and installed in accordance with that organization's standards. Therefore, WISHA will recognize sprinkler systems designed to, and maintained in accordance with, NBFU and earlier NFPA standards.

(2) Exemptions. In an effort to assure that employers will continue to use automatic sprinkler systems as the primary fire protection system in workplaces, WISHA is exempting from coverage those systems not required by a particular WISHA standard and which have been installed in workplaces solely for the purpose of protecting property. Many of these types of systems are installed in areas or buildings with little or no employee exposure. An example is those warehouses where employees may enter occasionally to take inventory or move stock. Some employers may choose to shut down those systems which are not specifically required by WISHA rather than upgrade them to comply with the standards. WISHA does not intend to regulate such systems. WISHA only intends to regulate those systems which are installed to comply with a particular WISHA standard.

(3) Design. There are two basic types of sprinkler system design. Pipe schedule designed systems are based on pipe schedule tables developed to protect hazards with standard sized pipe, number of sprinklers, and pipe lengths. Hydraulic designed systems are based on an engineered design of pipe size which will produce a given water density or flow rate at any particular point in the system. Either design can be used to comply with this standard.

The National Fire Protection Association's Standard No. 13, "Automatic Sprinkler Systems," contains the tables needed to design and install either type of system. Minimum water supplies, densities, and pipe sizes are given for all types of occupancies.

The employer may check with a reputable fire protection engineering consultant or sprinkler design company when evaluating existing systems or designing a new installation.

With the advent of new construction materials for the manufacture of sprinkler pipe, materials, other than steel, have been approved for use as sprinkler pipe. Selection of pipe material should be made on the basis of the type of installation and the acceptability of the material to local fire and building officials where such systems may serve more than one purpose.

Before new sprinkler systems are placed into service, an acceptance test is to be conducted. The employer should invite the installer, designer, insurance representative, and a local fire official to witness the test. Problems found during the test are to be corrected before the system is placed into service.

(4) Maintenance. It is important that any sprinkler system maintenance be done only when there is minimal employee exposure to the fire hazard. For example, if repairs or changes to the system are to be made, they should be made during those hours when employees are not working or are not occupying that portion of the workplace protected by the portion of the system which has been shut down.

The procedures for performing a flow test via a main drain test or by the use of an inspector's test valve can be obtained from the employer's fire insurance company or from the National Fire Protection Association's Standard No. 13A, "Sprinkler System, Maintenance."

(5) Water supplies. The water supply to a sprinkler system is one of the most important factors an employer should consider when evaluating a system. Obviously, if

there is no water supply, the system is useless. Water supplies can be lost for various reasons such as improperly closed valves, excessive demand, broken water mains, and broken fire pumps. The employer must be able to determine if or when this type of condition exists either by performing a main drain test or visual inspection. Another problem may be an inadequate water supply. For example, a light hazard occupancy may, through rehabilitation or change in tenants, become an ordinary or high hazard occupancy. In such cases, the exiting water supply may not be able to provide the pressure or duration necessary for proper protection. Employers must assure that proper design and tests have been made to assure an adequate water supply. These tests can be arranged through the employer's fire insurance carrier or through a local sprinkler maintenance company or through the local fire prevention organization.

Any time the employer must shut down the primary water supply for a sprinkler system, the standard requires that equivalent protection be provided. Equivalent protection may include a fire watch with extinguishers or hose lines in place and manned, or a secondary water supply such as a tank truck and pump, or a tank or fire pond with fire pumps, to protect the areas where the primary water supply is limited or shut down. The employer may also require evacuation of the workplace and have an emergency action plan which specifies such action.

(6) Protection of piping. Piping which is exposed to corrosive atmospheres, either chemical or natural, can become defective to the extent that it is useless. Employers must assure that piping is protected from corrosion by its material of construction, e.g., stainless steel, or by a protective coating, e.g., paint.

(7) Sprinklers. When an employer finds it necessary to replace sprinkler system components or otherwise change a sprinkler's design, employer should make a complete fire protection engineering survey of that part of the system being changed. This review should assure that the changes to the system will not alter the effectiveness of the system as it is presently designed. Water supplies, densities and flow characteristics should be maintained.

(8) Protection of sprinklers. All components of the system must be protected from mechanical impact damage. This can be achieved with the use of mechanical guards or screens or by locating components in areas where physical contact is impossible or limited.

(9) Sprinkler alarms. The most recognized sprinkler alarm is the water-motor gong or bell that sounds when water begins to flow through the system. This is not however, the only type of acceptable water flow alarm. Any alarm that gives an indication that water is flowing through the system is acceptable. For example, a siren, a whistle, a flashing light, or similar alerting device which can transmit a signal to the necessary persons would be acceptable. The purpose of the alarm is to alert persons that the system is operating, and that some type of planned action is necessary.

(10) Sprinkler spacing. For a sprinkler system to be effective there must be an adequate discharge of water spray from the sprinkler head. Any obstructions which hinder the designed density or spray pattern of the water may create unprotected areas which can cause fire to spread. There are some sprinklers that, because of the system's design, are deflected to specific areas. This type of obstruction is acceptable if the system's design takes it into consideration in providing adequate coverage.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-60799, filed 12/24/81.]

WAC 296-24-615 Fixed dry chemical extinguishing systems.

[Order 73-5, § 296-24-615, filed 5/9/73 and Order 73-4, § 296-24-615, filed 5/7/73.]

WAC 296-24-61501 General requirements. (1) Design. When dry chemical extinguishing systems are provided they shall meet the design requirements of the National Fire Protection Association's "Standard for Dry Chemical Extinguishing Systems" NFPA No. 17-1972 and the requirements of this section.

(2) Safety requirements. Where there is a possibility that personnel may be exposed to a dry chemical discharge, suitable safeguards shall be provided to insure prompt evacuation of such locations, and also to provide means for prompt rescue of any trapped personnel.

[Order 73-5, § 296-24-61501, filed 5/9/73 and Order 73-4, § 296-24-61501, filed 5/7/73.]

WAC 296-24-61503 Alarms and indicators. (1) General. Alarms and/or indicators are used to indicate the operation of the system, hazard to personnel, or failure of any supervised device or equipment. The devices may be audible or visual. The type, number, and location of the devices shall be such that their purpose is satisfactorily accomplished.

(2) Operation alarm.

(a) An alarm or indicator shall be provided to show that the system has operated, that personnel response may be needed, and that the system should be charged.

(b) Alarms indicating failure of supervised devices or equipment shall give prompt and positive indication of any failure and shall be distinctive from alarms indicating operation or hazardous conditions.

[Order 74-27, § 296-24-61503, filed 5/7/74; Order 73-5, § 296-24-61503, filed 5/9/73 and Order 73-4, § 296-24-61503, filed 5/7/73.]

WAC 296-24-61505 Inspection and maintenance. (1) Inspection and tests.

(a) At least annually, all dry chemical systems including alarms, shutdowns, and other associated equipment, shall be thoroughly inspected and checked for proper operation by a competent inspector.

(b) The purpose of the inspection and testing prescribed by this subsection (c) of this section shall be not only to insure that the system is in full operating condition but also to indicate the probable continuance of that

condition until the next inspection. Attention at this inspection shall be given to any extension of the hazard protected by the system.

(c) The inspector's report, with recommendations, if any, shall be filed with the employer or with whomever is designated by the employer.

(d) Between the regular annual inspection or tests, the system shall be inspected visually or otherwise by competent personnel, following a predetermined schedule.

(e) At least semiannually, all expellant gas containers shall be checked by pressure or weight against the required minimums.

(f) At least semiannually, all stored pressure dry chemical containers shall be checked by pressure and weight against the required minimums.

(g) Except for stored pressure systems, at least annually the dry chemical in the system storage container shall be sampled from the top center and also near the wall to determine the existence of lumps harder than will be friable when dropped from a height of 4 inches.

(2) Maintenance.

(a) These fixed dry chemical systems shall be maintained in full operating condition at all times. Use, impairment, and restoration of this protection shall be reported promptly to the employer.

(b) Any troubles or impairments shall be corrected at once by competent personnel.

[Order 76-6, § 296-24-61505, filed 3/1/76; Order 73-5, § 296-24-61505, filed 5/9/73 and Order 73-4, § 296-24-61505, filed 5/7/73.]

WAC 296-24-617 Fixed extinguishing systems, general. This section applies to criteria required for fixed extinguisher systems and all sections of this chapter having number WAC 296-24-617 in the section number shall apply.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-617, filed 12/24/81.]

WAC 296-24-61701 Scope and application. (1) This section applies to all fixed extinguishing systems installed to meet a particular WISHA standard except for automatic sprinkler systems which are covered by WAC 296-24-607.

(2) This section also applies to fixed systems not installed to meet a particular WISHA standard, but which, by means of their operation, may expose employees to possible injury, death, or adverse health consequences caused by the extinguishing agent. Such systems are only subject to the requirements of WAC 296-24-61703 (4) through (7) and 296-24-61705.

(3) Systems otherwise covered in subsection (2) of this section which are installed in areas with no employee exposure are exempted from the requirements of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61701, filed 12/24/81.]

WAC 296-24-61703 General requirements. (1) Fixed extinguishing system components and agents shall be designed and approved for use on the specific fire hazards they are expected to control or extinguish.

(2) If for any reason a fixed extinguishing system becomes inoperable, the employer shall notify employees and take the necessary temporary precautions to assure their safety until the system is restored to operating order. Any defects or impairments shall be properly corrected by trained personnel.

(3) The employer shall provide a distinctive alarm or signaling system which complies with WAC 296-24-631, and is capable of being perceived above ambient noise or light levels, on all extinguishing systems in those portions of the workplace covered by the extinguishing system to indicate when the extinguishing system is discharging. Discharge alarms are not required on systems where discharge is immediately recognizable.

(4) The employer shall provide effective safeguards to warn employees against entry into discharge areas where the atmosphere remains hazardous to employee safety or health.

(5) The employer shall post hazard warning or caution signs at the entrance to, and inside of, areas protected by fixed extinguishing systems which use agents in concentrations known to be hazardous to employee safety and health.

(6) The employer shall assure that fixed systems are inspected annually by a person knowledgeable in the design and function of the system to assure that the system is maintained in good operating condition.

(7) The employer shall assure that the weight and pressure of refillable containers is checked at least semiannually. If the container shows a loss in net content or weight of more than five percent, or a loss in pressure of more than ten percent, it shall be subjected to maintenance.

(8) The employer shall assure that factory charged nonrefillable containers which have no means of pressure indication are weighed at least semiannually. If a container shows a loss in net weight of more than five percent it shall be replaced.

(9) The employer shall assure that inspection and maintenance dates are recorded on the container, on a tag attached to the container, or in a central location. A record of the last semiannual check shall be maintained until the container is checked again or for the life of the container, whichever is less.

(10) The employer shall train employees designated to inspect, maintain, operate, or repair fixed extinguishing systems and annually review their training to keep them up-to-date in the functions they are to perform.

(11) The employer shall not use chlorobromomethane or carbon tetrachloride as an extinguishing agent where employees may be exposed.

(12) The employer shall assure that systems installed in the presence of corrosive atmospheres are constructed of noncorrosive material or otherwise protected against corrosion.

(13) Automatic detection equipment shall be approved, installed and maintained in accordance with WAC 296-24-629.

(14) The employer shall assure that all systems designed for and installed in areas with climatic extremes

shall operate effectively at the expected extreme temperatures.

(15) The employer shall assure that at least one manual station is provided for discharge activation of each fixed extinguishing system.

(16) The employer shall assure that manual operating devices are identified as to the hazard against which they will provide protection.

(17) The employer shall provide and assure the use of the personal protective equipment needed for immediate rescue of employees trapped in hazardous atmospheres created by an agent discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61703, filed 12/24/81.]

WAC 296-24-61705 Total flooding systems with potential health and safety hazards to employees. (1) The employer shall provide an emergency action plan in accordance with WAC 296-24-567 for each area within a workplace that is protected by a total flooding system which provides agent concentrations exceeding the maximum safe levels.

(2) Systems installed in areas where employees cannot enter during or after the system's operation are exempt from the requirements of this section.

(3) On all total flooding systems the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and is capable of being perceived above ambient light or noise levels before the system discharges, which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall provide automatic actuation of total flooding systems by means of an approved fire detection device installed and interconnected with a predischarge employee alarm system to give employees time to safely exit from the discharge area prior to system discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61705, filed 12/24/81.]

WAC 296-24-61799 Appendix A--Fixed extinguishing systems, general. (1) Scope and application. This section contains the general requirements that are applicable to all fixed extinguishing systems installed to meet WISHA standards. It also applies to those fixed extinguishing systems, generally total flooding, which are not required by WISHA, but which, because of the agent's discharge, may expose employees to hazardous concentrations of extinguishing agents or combustion byproducts. Employees who work around fixed extinguishing systems must be warned of the possible hazards associated with the system and its agent. For example, fixed dry chemical extinguishing systems may generate a large enough cloud of dry chemical particles that employees may become visually disoriented. Certain gaseous agents can expose employees to hazardous byproducts of combustion when the agent comes into contact with hot metal or other hot surface. Some gaseous agents may be present in hazardous concentrations when the system has totally discharged because an extra rich concentration is necessary to extinguish deep-seated fires. Certain local application systems may be designed to discharge onto the flaming surface of a liquid, and it is possible that the liquid can splatter when hit with the discharging agent. All of these hazards must be determined before the system is placed into operation, and must be discussed with employees.

Based on the known toxicological effects of agents such as carbon tetrachloride and chlorobromomethane, WISHA is not permitting the use of these agents in areas where employees can be exposed to the agent or its side effects. However, chlorobromomethane has been accepted and may be used as an explosion suppression agent in unoccupied spaces. WISHA is permitting the use of this agent only in areas where employees will not be exposed.

(2) Distinctive alarm signals. A distinctive alarm signal is required to indicate that a fixed system is discharging. Such a signal is necessary on those systems where it is not immediately apparent that the system is discharging. For example, certain gaseous agents make a loud noise when they discharge. In this case, no alarm signal is necessary. However, where systems are located in remote locations or away from the general work area and where it is possible that a system could discharge without anyone knowing that it is doing so, then a distinctive alarm is necessary to warn employees of the hazards that may exist. The alarm can be a bell, gong, whistle, horn, flashing light, or any combination of signals as long as it is identifiable as a discharge alarm.

(3) Maintenance. The employer is responsible for the maintenance of all fixed systems, but this responsibility does not preclude the use of outside contractors to do such work. New systems should be subjected to an acceptance test before placed in service. The employer should invite the installer, designer, insurance representative and others to witness the test. Problems found during the test need to be corrected before the system is considered operational.

(4) Manual discharge stations. There are instances, such as for mechanical reasons and others, where the standards call for a manual backup activation device. While the location of this device is not specified in the standard, the employer should assume that the device should be located where employees can easily reach it. It could, for example, be located along the main means of egress from the protected area so that employees could activate the system as they evacuate the work area.

(5) Personal protective equipment. The employer is required to provide the necessary personal protective equipment to rescue employees who may be trapped in a totally flooded environment which may be hazardous to their health. The equipment would normally include a positive-pressure self-contained breathing apparatus and any necessary first aid equipment. In cases where the employer can assure the prompt arrival of the local fire department or plant emergency personnel which can provide the equipment, this can be considered as complying with the standards.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-61799, filed 12/24/81.]

WAC 296-24-620 Carbon dioxide extinguishing systems.

[Order 73-5, § 296-24-620, filed 5/9/73 and Order 73-4, § 296-24-620, filed 5/7/73.]

WAC 296-24-62001 General requirements. (1) Design. When carbon dioxide extinguishing systems are provided they shall meet the design requirements of the National Fire Protection Association's "Standard on Carbon Dioxide Extinguishing Systems" NFPA No. 12-1972 and the requirements of WAC 296-24-620 through 296-24-62003.

(2) Safety requirements. In any use of carbon dioxide where there is a possibility that employees may be trapped in, or enter into atmospheres made hazardous by a carbon dioxide discharge, suitable safeguards shall be provided to insure prompt evacuation of and to prevent entry into such atmospheres and also to provide means for prompt rescue of any trapped personnel. Such safety items as personnel training, warning signs, discharge alarms, predischarge alarms, and breathing apparatus shall be considered.

[Order 73-5, § 296-24-62001, filed 5/9/73 and Order 73-4, § 296-24-62001, filed 5/7/73.]

WAC 296-24-62003 Inspection and maintenance. (1) Inspection and tests.

(a) At least annually, all carbon dioxide systems shall be thoroughly inspected and tested for proper operation by a competent engineer or inspector.

(b) The goal of this inspection and testing shall be not only to insure that the system is in full operating condition but shall indicate the probable continuance of that condition until the next inspection.

(c) Suitable discharge tests shall be made when any inspection indicates their advisability.

(d) Between the regular service contract inspection or tests, the system shall be inspected visually or otherwise by competent personnel, following a predetermined schedule.

(e) At least semiannually, all high pressure cylinders shall be weighed. If, at any time, a container shows a loss in net content or more than 10 percent, it shall be refilled or replaced.

(f) If, at any time, a low pressure container shows a loss of more than 10 percent, it shall be refilled, unless the minimum gas requirements are still provided.

(2) Maintenance.

(a) These carbon dioxide systems shall be maintained in full operating condition at all times.

(b) Any troubles or impairments shall be corrected at once by competent personnel.

[Order 74-27, § 296-24-62003, filed 5/7/74; Order 73-5, § 296-24-62003, filed 5/9/73 and Order 73-4, § 296-24-62003, filed 5/7/73.]

WAC 296-24-622 Fixed extinguishing systems, dry chemical. The design and installation requirements specifically applicable to fixed extinguishing systems, using dry chemical as the extinguishing agent, are contained in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-622, filed 12/24/81.]

WAC 296-24-62201 Scope and application. This section applies to all fixed extinguishing systems using dry chemical as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62201, filed 12/24/81.]

WAC 296-24-62203 Specific requirements. (1) The employer shall assure that dry chemical agents are compatible with any foams or wetting agents with which they are used.

(2) The employer may not mix together dry chemical extinguishing agents of different compositions. The employer shall assure that dry chemical systems are refilled with the chemical stated on the approval nameplate or an equivalent compatible material.

(3) When dry chemical discharge may obscure vision, the employer shall provide a predischarge employee alarm which complies with WAC 296-24-631, and which will give employees time to safely exit from the discharge area prior to system discharge.

(4) The employer shall sample the dry chemical supply of all but stored pressure systems at least annually to assure that the dry chemical supply is free of moisture which may cause the supply to cake or form lumps.

(5) The employer shall assure that the rate of application of dry chemicals is such that the designed concentration of the system will be reached within thirty seconds of initial discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62203, filed 12/24/81.]

WAC 296-24-62299 Appendix A--Fixed extinguishing systems, dry chemical. (1) Scope and application. The requirements of this section apply only to dry chemical systems. These requirements are to be used in conjunction with the requirements of WAC 296-24-617.

(2) Maintenance. The employer is responsible for assuring that dry chemical systems will operate effectively. To do this, periodic maintenance is necessary. One test that must be conducted during the maintenance check is one which will determine if the agent has remained free of moisture. If an agent absorbs any moisture, it may tend to cake and thereby clog the system. An easy test for acceptable moisture content is to take a lump of dry chemical from the container and drop it from a height of four inches. If the lump crumbles into fine particles, the agent is acceptable.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62299, filed 12/24/81.]

WAC 296-24-623 Fixed extinguishing systems, gaseous agent. This section contains the design and installation requirements for fixed extinguishing systems using gaseous agents.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-623, filed 12/24/81.]

WAC 296-24-62301 Scope and application. (1) Scope. This section applies to all fixed extinguishing systems, using a gas as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. In some cases, the gas may be in a liquid state during storage.

(2) Application. The requirements of WAC 296-24-61703 (2) and (4) through (7) shall apply only to total flooding systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62301, filed 12/24/81.]

WAC 296-24-62303 Specific requirements. (1) Agents used for initial supply and replenishment shall be of the type approved for the system's application. Carbon dioxide obtained by dry ice conversion to liquid is not acceptable unless it is processed to remove excess water and oil.

(2) Except during overhaul, the employer shall assure that the designed concentration of gaseous agents is maintained until the fire has been extinguished or is under control.

(3) The employer shall assure that employees are not exposed to toxic levels of gaseous agent or its decomposition products.

(4) The employer shall assure that the designed extinguishing concentration is reached within thirty seconds of initial discharge except for Halon systems which must achieve design concentration within ten seconds.

(5) The employer shall provide a distinctive predischarge employee alarm capable of being perceived above ambient light or noise levels when agent design concentrations exceed the maximum safe level for employee exposure. A predischarge employee alarm for alerting employees before system discharge shall be provided on Halon 1211 and carbon dioxide systems with a design concentration of four percent or greater, and for Halon 1301 systems with a design concentration of ten percent or greater. The predischarge employee alarm shall provide employees time to safely exit the discharge area prior to system discharge.

(6)(a) Where egress from an area cannot be accomplished within one minute, the employer shall not use Halon 1301 in concentrations greater than seven percent.

(b) Where egress takes greater than thirty seconds but less than one minute, the employer shall not use Halon 1301 in a concentration greater than ten percent.

(c) Halon 1301 concentrations greater than ten percent are only permitted in areas not normally occupied by employees provided that any employee in the area can escape within thirty seconds. The employer shall assure that no unprotected employees enter the area during agent discharge.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62303, filed 12/24/81.]

WAC 296-24-62399 Appendix A--Fixed extinguishing systems, gaseous agent. (1) Scope and application. This section applies only to those systems which use gaseous agents. The requirements of WAC 296-24-617 also apply to the gaseous agent systems covered in this section.

(2) Design concentrations. Total flooding gaseous systems are based on the volume of gas which must be discharged in order to produce a certain designed concentration of gas in an enclosed area. The concentration needed to extinguish a fire depends on several factors including the type of fire hazard and the amount of gas expected to leak away from the area during discharge. At times it is necessary to "super-saturate" a work area to provide for expected leakage from the enclosed area. In such cases, employers must assure that the flooded area has been ventilated before employees are permitted to reenter the work area without protective clothing and respirators.

(3) Toxic decomposition. Certain halogenated hydrocarbons will break down or decompose when they are combined with high temperatures found in the fire environment. The products of the decomposition can include toxic elements or compounds. For example, when Halon 1211 is placed into contact with hot metal it will break down and form bromide or fluoride fumes. The employer must find out which toxic products may result from decomposition of a particular agent from the manufacturer, and take the necessary precautions to prevent employee exposure to the hazard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62399, filed 12/24/81.]

WAC 296-24-625 Local fire alarm signaling systems. (1) General requirements. Where local fire alarm signaling systems are provided, they shall meet the design requirements of the National Fire Protection Association's "Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Watchman, Fire Alarm and Supervisory Service." NFPA No. 72A-1967 and the requirements of this section.

(2) Fire alarm boxes.

(a) General. Manual fire alarm boxes shall be approved for the particular application and shall be used only for the fire protective signaling purposes. Combined fire alarm and watchman's signaling boxes are acceptable.

(b) Mounting. Each box shall be securely mounted.

(c) Distribution. Manual fire alarm boxes shall be distributed throughout the protected area so that they are unobstructed, readily accessible, and located in the normal path of exit from the area. Additional boxes shall be provided on each floor to obtain a maximum horizontal travel distance of 200 feet to the nearest box.

(3) Maintenance. All systems shall be under the supervision of qualified persons. These persons shall cause tests and inspections to be made at weekly intervals, and shall have general charge of all alterations and additions to the systems under their supervision.

[Order 74-27, § 296-24-625, filed 5/7/74.]

WAC 296-24-627 Fixed extinguishing systems, water spray and foam. This section contains the design and

installation requirements for extinguishing systems using water or foam solution as the extinguishing agent.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-627, filed 12/24/81.]

WAC 296-24-62701 Scope and application. This section applies to all fixed extinguishing systems, using water or foam solution as the extinguishing agent, installed to meet a particular WISHA standard. These systems shall also comply with WAC 296-24-617. This section does not apply to automatic sprinkler systems which are covered under WAC 296-24-607.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62701, filed 12/24/81.]

WAC 296-24-62703 Specific requirements. (1) The employer shall assure that foam and water spray systems are designed to be effective in at least controlling fire in the protected area or on protected equipment.

(2) The employer shall assure that drainage of water spray systems is directed away from areas where employees are working and that no emergency egress is permitted through the drainage path.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62703, filed 12/24/81.]

WAC 296-24-62799 Appendix A--Fixed extinguishing systems, water spray and foam. (1) Scope and application. This section applies to those systems that use water spray or foam. The requirements of WAC 296-24-617 also apply to this type of system.

(2) Characteristics of foams. When selecting the type of foam for a specific hazard, the employer should consider the following limitations of some foams.

(a) Some foams are not acceptable for use on fires involving flammable gases and liquefied gases with boiling points below ambient workplace temperatures. Other foams are not effective when used on fires involving polar solvent liquids.

(b) Any agent using water as part of the mixture should not be used on fire involving combustible metals unless it is applied under proper conditions to reduce the temperature of burning metal below the ignition temperature. The employer should use only those foams that have been tested and accepted for this application by a recognized independent testing laboratory.

(c) Certain types of foams may be incompatible and break down when they are mixed together.

(d) For fires involving water miscible solvents, employers should use only those foams tested and approved for such use. Regular protein foams may not be effective on such solvents.

Whenever employers provide a foam or water spray system, drainage facilities must be provided to carry contaminated water or foam overflow away from the employee work area and egress routes. This drainage system should drain to a central impounding area where it can be collected and disposed of properly. Other government agencies may have regulations concerning environmental considerations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62799, filed 12/24/81.]

WAC 296-24-629 Fire detection systems. The requirements for installation, restoration, maintenance, testing and protection of fire detection systems and the criteria for response time can be found in this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-629, filed 12/24/81.]

WAC 296-24-62901 Scope and application. This section applies to all automatic fire detection systems installed to meet the requirements of a particular WISHA standard.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62901, filed 12/24/81.]

WAC 296-24-62903 Installation and restoration. (1) The employer shall assure that all devices and equipment constructed and installed to comply with this standard are approved for the purpose for which they are intended.

(2) The employer shall restore all fire detection systems and components to normal operating condition as promptly as possible after each test or alarm. Spare detection devices and components which are normally destroyed in the process of detecting fires shall be available on the premises or from a local supplier in sufficient quantities and locations for prompt restoration of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62903, filed 12/24/81.]

WAC 296-24-62905 Maintenance and testing. (1) The employer shall maintain all systems in an operable condition except during repairs or maintenance.

(2) The employer shall assure that fire detectors and fire detection systems are tested and adjusted as often as needed to maintain proper reliability and operating condition except that factory calibrated detectors need not be adjusted after installation.

(3) The employer shall assure that pneumatic and hydraulic operated detection systems installed after July 1, 1982, are equipped with supervised systems.

(4) The employer shall assure that the servicing, maintenance and testing of fire detection systems, including cleaning and necessary sensitivity adjustments are performed by a trained person knowledgeable in the operations and functions of the system.

(5) The employer shall also assure that fire detectors that need to be cleaned of dirt, dust, or other particulates in order to be fully operational are cleaned at regular periodic intervals.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62905, filed 12/24/81.]

WAC 296-24-62907 Protection of fire detectors. (1) The employer shall assure that fire detection equipment installed outdoors or in the presence of corrosive atmospheres be protected from corrosion. The employer shall provide a canopy, hood, or other suitable protection

for detection equipment requiring protection from the weather.

(2) The employer shall locate or otherwise protect detection equipment so that it is protected from mechanical or physical impact which might render it inoperable.

(3) The employer shall assure that detectors are supported independently of their attachment to wires or tubing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62907, filed 12/24/81.]

WAC 296-24-62909 Response time. (1) The employer shall assure that fire detection systems installed for the purpose of actuating fire extinguishment or suppression systems shall be designed to operate in time to control or extinguish a fire.

(2) The employer shall assure that fire detection systems installed for the purpose of employee alarm and evacuation be designed and installed to provide a warning for emergency action and safe escape of employees.

(3) The employer shall not delay alarms or devices initiated by fire detector actuation for more than thirty seconds unless such delay is necessary for the immediate safety of employees. When such delay is necessary, it shall be addressed in an emergency action plan meeting the requirements of WAC 296-24-567.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62909, filed 12/24/81.]

WAC 296-24-62911 Number, location and spacing of detecting devices. The employer shall assure that the number, spacing and location of fire detectors is based upon design data obtained from field experience, or tests, engineering surveys, the manufacturer's recommendations, or a recognized testing laboratory listing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62911, filed 12/24/81.]

WAC 296-24-62999 Appendix A--Fire detection systems. (1) Installation and restoration. Fire detection systems must be designed by knowledgeable engineers or other professionals, with expertise in fire detection systems and when the systems are installed, there should be an acceptance test performed on the system to insure it operates properly. The manufacturer's recommendations for system design should be consulted. While entire systems may not be approved, each component used in the system is required to be approved. Custom fire detection systems should be designed by knowledgeable fire protection or electrical engineers who are familiar with the workplace hazards and conditions. Some systems may only have one or two individual detectors for a small workplace, but good design and installation is still important. An acceptance test should be performed on all systems, including these smaller systems.

WISHA has a requirement that spare components used to replace those which may be destroyed during an alarm situation be available in sufficient quantities and locations for prompt restoration of the system. This does not mean that the parts or components have to be stored at the workplace. If the employer can assure that the supply of parts is available in the local community or the general metropolitan area of the workplace, then the requirements for storage and availability have been met. The intent is to make sure that the alarm system is fully operational when employees are occupying the workplace, and that when the system operates it can be returned to full service the next day or sooner.

(2) Supervision. Fire detection systems should be supervised. The object of supervision is detection of any failure of the circuitry, and the employer should use any method that will assure that the system's circuits are operational. Electrically operated sensors for air pressure, fluid pressure, or electrical circuits, can provide effective monitoring and are the typical types of supervision.

(3) Protection of fire detectors. Fire detectors must be protected from corrosion either by protective coating, by being manufactured from noncorrosive materials or by location. Detectors must also be protected from mechanical impact damage, either by suitable cages or metal guards where such hazards are present, or by locating them above or out of contact with materials or equipment which may cause damage.

(4) Number, location, and spacing of detectors. This information can be obtained from the approval listing for detectors or NFPA standards. It can also be obtained from fire protection engineers or consultants or manufacturers of equipment who have access to approval listing and design methods.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-62999, filed 12/24/81.]

WAC 296-24-631 Employee alarm systems. This section contains requirements for the design, installation, restoration and manual actuation of all types of emergency employee alarm systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-631, filed 12/24/81.]

WAC 296-24-63101 Scope and application. (1) This section applies to all emergency employee alarms installed to meet a particular WISHA standard. This section does not apply to those discharge or supervisory alarms required on various fixed extinguishing systems or to supervisory alarms on fire suppression, alarm or detection systems unless they are intended to be employee alarm systems.

(2) The requirements in this section that pertain to maintenance, testing and inspection shall apply to all local fire alarm signaling systems used for alerting employees regardless of the other functions of the system.

(3) All predischarge employee alarms installed to meet a particular WISHA standard shall meet the requirements of WAC 296-24-63103 (1) through (4) and 296-24-63107(1).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63101, filed 12/24/81.]

WAC 296-24-63103 General requirements. (1) The employee alarm system shall provide warning for necessary emergency action as called for in the emergency

action plan, or for reaction time for safe escape of employees from the workplace or the immediate work area, or both.

(2) The employee alarm shall be capable of being perceived above ambient noise or light levels by all employees in the affected portions of the workplace. Tactile devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm.

(3) The employee alarm shall be distinctive and recognizable as a signal to evacuate the work area or to perform actions designated under the emergency action plan.

(4) The employer shall explain to each employee the preferred means of reporting emergencies, such as manual pull box alarms, public address systems, radio or telephones. The employer shall post emergency telephone numbers near telephones, or employee notice boards, and other conspicuous locations when telephones serve as a means of reporting emergencies. Where a communication system also serves as the employee alarm system, all emergency messages shall have priority over all nonemergency messages.

(5) The employer shall establish procedures for sounding emergency alarms in the workplace. For those employers with ten or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Such workplaces need not have a back–up system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–63103, filed 12/24/81.]

WAC 296–24–63105 Installation and restoration. (1) The employer shall assure that all devices, components, combinations of devices or systems constructed and installed to comply with this standard are approved. Steam whistles, air horns, strobe lights or similar lighting devices, or tactile devices meeting the requirements of this section are considered to meet this requirement for approval.

(2) The employer shall assure that all employee alarm systems are restored to normal operating condition as promptly as possible after each test or alarm. Spare alarm devices and components subject to wear or destruction shall be available in sufficient quantities and locations for prompt restoration of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–63105, filed 12/24/81.]

WAC 296–24–63107 Maintenance and testing. (1) The employer shall assure that all employee alarm systems are maintained in operating condition except when undergoing repairs or maintenance.

(2) The employer shall assure that a test of the reliability and adequacy of nonsupervised employee alarm systems is made every two months. A different actuation device shall be used in each test of a multi–actuation device system so that no individual device is used for two consecutive tests.

(3) The employer shall maintain or replace power supplies as often as is necessary to assure a fully operational condition. Back–up means of alarm, such as employee runners or telephones, shall be provided when systems are out of service.

(4) The employer shall assure that employee alarm circuitry installed after July 1, 1982, which is capable of being supervised is supervised and that it will provide positive notification to assigned personnel whenever a deficiency exists in the system. The employer shall assure that all supervised employee alarm systems are tested at least annually for reliability and adequacy.

(5) The employer shall assure that the servicing, maintenance and testing of employee alarms are done by persons trained in the designed operation and functions necessary for reliable and safe operation of the system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–63107, filed 12/24/81.]

WAC 296–24–63109 Manual operation. The employer shall assure that manually operated actuation devices for use in conjunction with employee alarms are unobstructed, conspicuous and readily accessible.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–63109, filed 12/24/81.]

WAC 296–24–63199 Appendix A––Employee alarm systems. (1) Scope and application. This section is intended to apply to employee alarm systems used for all types of employee emergencies except those which occur so quickly and at such a rapid rate (e.g., explosions) that any action by the employee is extremely limited following detection.

In small workplaces with ten or less employees the alarm system can be by direct voice communication (shouting) where any one individual can quickly alert all other employees. Radio may be used to transmit alarms from remote workplaces where telephone service is not available, provided that radio messages will be monitored by emergency services, such as fire, police or others, to insure alarms are transmitted and received.

(2) Alarm signal alternatives. In recognition of physically impaired individuals, WISHA is accepting various methods of giving alarm signals. For example, visual, tactile or audible alarm signals are acceptable methods for giving alarms to employees. Flashing lights or vibrating devices can be used in areas where the employer has hired employees with hearing or vision impairments. Vibrating devices, air fans, or other tactile devices can be used where visually and hearing impaired employees work. Employers are cautioned that certain frequencies of flashing lights have been claimed to initiate epileptic seizures in some employees and that this fact should be considered when selecting an alarm device. Two–way radio communications would be most appropriate for transmitting emergency alarms in such workplaces which may be remote or where telephones may not be available.

(3) Reporting alarms. Employee alarms may require different means of reporting, depending on the workplace involved. For example, in small workplaces, a simple shout throughout the workplace may be sufficient to warn employees of a fire or other emergency. In larger workplaces, more sophisticated equipment is necessary so that entire plants or high-rise buildings are not evacuated for one small emergency. In remote areas, such as pumping plants, radio communication with a central base station may be necessary. The goal of this standard is to assure that all employees who need to know that an emergency exists can be notified of the emergency. The method of transmitting the alarm should reflect the situation found at the workplace.

Personal radio transmitters, worn by an individual, can be used where the individual may be working, such as in a remote location. Such personal radio transmitters shall send a distinct signal and should clearly indicate who is having an emergency, the location, and the nature of the emergency. All radio transmitters need a feedback system to assure that the emergency alarm is sent to the people who can provide assistance.

For multistory buildings or single-story buildings with interior walls for subdivisions, the more traditional alarm systems are recommended for these types of workplaces. Supervised telephone or manual fire alarm or pull box stations with paging systems to transmit messages throughout the building is the recommended alarm system. The alarm box stations should be available within a travel distance of 200 feet. Water flow detection on a sprinkler system, fire detection systems (guard's supervisory station) or tour signal (watchman's service), or other related systems may be part of the overall system. The paging system may be used for nonemergency operations provided the emergency messages and uses will have precedence over all other uses of the system.

(4) Supervision. The requirements for supervising the employee alarm system circuitry and power supply may be accomplished in a variety of ways. Typically, electrically operated sensors for air pressure, fluid pressure, steam pressure, or electrical continuity of circuitry may be used to continuously monitor the system to assure it is operational and to identify trouble in the system and give a warning signal.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63199, filed 12/24/81.]

WAC 296-24-63299 Appendix B--National consensus standards. The following table contains a cross-reference listing of those current national consensus standards which contains information and guidelines that would be considered acceptable in complying with requirements in the specific sections.

Section	National Consensus Standard
WAC 296-24-58505	ANSI/NFPA No. 1972, Structural Fire Fighter's Helmets. ANSI Z88.5 American National Standard, Practice for Respirator Protection for the Fire Service. ANSI/NFPA No. 1971, Protective Clothing for Structural Fire Fighters. NFPA No. 1041, Fire Service Instructor Professional Qualifications.
WAC 296-24-592	ANSI/NFPA No. 10, Portable Fire Extinguishers.
WAC 296-24-602	ANSI/NFPA No. 18, Wetting Agents. ANSI/NFPA No. 20, Centrifugal Fire Pumps. NFPA No. 21, Steam Fire Pumps. ANSI/NFPA No. 22, Water Tanks. NFPA No. 24, Outside Protection. NFPA No. 26, Supervision of Valves. NFPA No. 13E, Fire Department Operations in Properties Protected by Sprinkler, Standpipe Systems. ANSI/NFPA No. 194, Fire Hose Connections. NFPA No. 197, Initial Fire Attack, Training for. NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-607	ANSI/NFPA No. 13, Sprinkler Systems. NFPA No. 13A, Sprinkler Systems, Maintenance. ANSI/NFPA No. 18, Wetting Agents. ANSI/NFPA No. 20, Centrifugal Fire Pumps. ANSI/NFPA No. 22, Water Tanks. NFPA No. 24, Outside Protection. NFPA No. 26, Supervision of Valves. ANSI/NFPA No. 72B, Auxiliary Signaling Systems. NFPA No. 1231, Water Supplies for Suburban and Rural Fire Fighting.
WAC 296-24-617	ANSI/NFPA No. 11, Foam Systems. ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems. ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 12, Carbon Dioxide Systems. ANSI/NFPA No. 12A, Halon 1301 Systems. ANSI/NFPA No. 12B, Halon 1211 Systems. ANSI/NFPA No. 15, Water Spray Systems. ANSI/NFPA No. 16, Foam-Water Spray Systems. ANSI/NFPA No. 17, Dry Chemical Systems. ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-622	ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 17, Dry Chemical Systems.
WAC 296-24-623	ANSI/NFPA No. 12, Carbon Dioxide Systems. ANSI/NFPA No. 12A, Halon 1211 Systems. ANSI/NFPA No. 12B, Halon 1301 Systems. ANSI/NFPA No. 69, Explosion Suppression Systems.
WAC 296-24-627	ANSI/NFPA No. 11, Foam Extinguishing Systems. ANSI/NFPA No. 11A, High Expansion Foam Extinguishing Systems. ANSI/NFPA No. 11B, Synthetic Foam and Combined Agent Systems. ANSI/NFPA No. 15, Water Spray Fixed Systems. ANSI/NFPA No. 16, Foam-Water Spray Systems. ANSI/NFPA No. 18, Wetting Agents. NFPA No. 26, Supervision of Valves.
WAC 296-24-629	ANSI/NFPA No. 71, Central Station Signaling Systems. ANSI/NFPA No. 72A, Local Protective Signaling Systems. ANSI/NFPA No. 72B, Auxiliary Signaling Systems. ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems. ANSI/NFPA No. 72E, Automatic Fire Detectors. ANSI/NFPA No. 101, Life Safety Code.
WAC 296-24-631	ANSI/NFPA No. 71, Central Station Signaling Systems. ANSI/NFPA No. 72A, Local Protective Signaling Systems.

Section	National Consensus Standard
	ANSI/NFPA No. 72B, Auxiliary Protective Signaling Systems. ANSI/NFPA No. 72C, Remote Station Protective Signaling Systems. ANSI/NFPA No. 72D, Proprietary Protective Signaling Systems. ANSI/NFPA No. 101, Life Safety Code.
Metric Conversion....	ANSI/ASTM NSo. E380, American National Standard for Metric Practice.

NFPA standards are available from the National Fire Protection Association; 470 Atlantic Avenue; Boston, MA 02210.

ANSI Standards are available from the American National Standards Institute; 1430 Broadway; New York, NY 10018.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63299, filed 12/24/81.]

WAC 296-24-63399 Appendix C--Fire protection references for further information. (I) Appendix general references. The following references provide information which can be helpful in understanding the requirements contained in all of the sections of Subpart L:

(A) Fire Protection Handbook, National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(B) Accident Prevention Manual for Industrial Operations, National Safety Council, 425 North Michigan Avenue, Chicago, IL 60611.

(C) Various associations also publish information which may be useful in understanding these standards. Examples of these associations are: Fire Equipment Manufacturers Association (FEMA) of Arlington, VA 22204, and the National Association of Fire Equipment Distributors (NAFED) of Chicago, IL 60601.

(II) Appendix references applicable to individual sections. The following references are grouped according to individual sections contained in Subpart L. These references provide information which may be helpful in understanding and implementing the standards of each section of Subpart L.

(A) WAC 296-24-58505 - Fire brigades:

(1) Private Fire Brigades, NFPA 27; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Initial Fire Attack, Training Standard On, NFPA 197; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Fire Fighter Professional Qualifications, NFPA 1001; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Organization for Fire Services, NFPA 1201; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Organization of a Fire Department, NFPA 1202; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Protective Clothing for Structural Fire Fighting, ANSI/NFPA 1971; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) American National Standard for Men's Safety-Toe Footwear, ANSI Z4.1; American National Standards Institute, New York, NY 10018.

(8) American National Standard for Occupational and Educational Eye and Face Protection, ANSI Z87.1; American National Standards Institute, New York, NY 10018.

(9) American National Standard, Safety Requirements for Industrial Head Protection, ANSI Z89.1; American National Standards Institute, New York, NY 10018.

(10) Specifications for Protective Headgear for Vehicular Users, ANSI Z90.1; American National Standards Institute, New York, NY 10018.

(11) Testing Physical Fitness; Davis and Santa Maria, Fire Command, April 1975.

(12) Development of a Job-Related Physical Performance Examination for Fire Fighters; Dotson and Others. A summary report for the National Fire Prevention and Control Administration, Washington, D.C., March 1977.

(13) Proposed Sample Standards for Fire Fighters' Protective Clothing and Equipment; International Association of Fire Fighters, Washington, D.C.

(14) A Study of Facepiece Leakage of Self-Contained Breathing Apparatus by DOP Man Tests; Los Alamos Scientific Laboratory, Los Alamos, N.M.

(15) The Development of Criteria for Fire Fighters' Gloves; Vol. II: Glove Criteria and Test Methods; National Institute for Occupational Safety and Health, Cincinnati, Ohio, 1976.

(16) Made Performance Criteria for Structural Fire Fighters' Helmets; National Fire Prevention and Control Administration, Washington, D.C., 1977.

(17) Firefighters; Job Safety and Health Magazine, Occupational Safety and Health Administration, Washington, D.C., June 1978.

(18) Eating Smoke—The Dispensable Diet; Utech, H.P. The Fire Independent, 1975.

(19) Project Monoxide—A Medical Study of an Occupational Hazard of Fire Fighters; International Association of Fire Fighters, Washington, D.C.

(20) Occupational Exposures to Carbon Monoxide in Baltimore Firefighters; Radford Baltimore, MD. Journal of Occupational Medicine, September, 1976.

(21) Fire Brigades; National Safety Council, Chicago, IL, 1966.

(22) American National Standard, Practice for Respiratory Protection for the Fire Service, ANSI Z88.5; American National Standards Institute, New York, NY 10018.

(23) Respirator Studies for the Nuclear Regulatory Commission; October 1, 1977—September 30, 1978. Evaluation and Performance of Open-Circuit Breathing Apparatus. NUREG/CR-1235. Los Alamos Scientific Laboratory; Los Alamos, NM 87545, January, 1980.

(B) WAC 296-24-592 - Portable fire extinguishers:

(1) Standard for Portable Fire Extinguishers, ANSI/NFPA 10; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Methods for Hydrostatic Testing of Compressed-Gas Cylinders, C-1; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(3) Recommendations for the Disposition of Unserviceable Compressed-Gas Cylinders, C-2; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(4) Standard for Visual Inspection of Compressed-Gas Cylinders, C-6; Compressed Gas Association, 500 Fifth Avenue, New York, NY 10036.

(5) Portable Fire Extinguisher Selection Guide, National Association of Fire Equipment Distributors; 111 East Wacker Drive, Chicago, IL 60601.

(C) WAC 296-24-602 - Standpipe and hose systems:

(1) Standard for the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard of the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Screw Threads and Gaskets for Fire Hose Connections, ANSI/NFPA 194; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Fire Hose, NFPA 196; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for the Care of Fire Hose, NFPA 198; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(D) WAC 296-24-607 - Automatic sprinkler systems:

(1) Standard of the Installation of Sprinkler Systems, ANSI/NFPA 13; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for the Care and Maintenance of Sprinkler Systems, ANSI/NFPA 13A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Standpipe and Hose Systems, ANSI/NFPA 14; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for the Installation of Centrifugal Fire Pumps, ANSI/NFPA 20; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Water Tanks for Private Fire Protection, ANSI/NFPA 22; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Indoor General Storage, ANSI/NFPA 231; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for Rock Storage of Materials, ANSI/NFPA 231C; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(E) WAC 296-24-617 - Fixed extinguishing systems, general information:

(1) Standard for Foam Extinguishing Systems, ANSI/NFPA 11; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Hi-Expansion Foam systems, ANSI/NFPA 11A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Synthetic Foam and Combined Agent Systems, ANSI/NFPA 11B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard on Halon 1301, ANSI/NFPA 12A; National Fire Protection Association, Boston, MA 02210.

(6) Standard on Halon 1211, ANSI/NFPA 12B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Standard for Water Spray Systems, ANSI/NFPA 15; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(8) Standard for Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(9) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(F) WAC 296-24-622 - Fixed extinguishing systems, dry chemical:

(1) Standard for Dry Chemical Extinguishing Systems, ANSI/NFPA 17; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for the Installation of Equipment for the Removal of Smoke and Grease-Laden Vapor from Commercial Cooling Equipment, NFPA 96; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(G) WAC 296-24-623 - Fixed extinguishing systems, gaseous agents:

(1) Standard on Carbon Dioxide Extinguishing Systems, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard on Halon 1301, ANSI/NFPA 12B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Halon 1211, ANSI/NFPA 12; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard on Explosion Prevention Systems, ANSI/NFPA 69; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Determination of Halon 1301/1211 Threshold Extinguishing Concentrations Using the Cup Burner Method, Riley and Olson, Ansul Report AL-530-A.

(H) WAC 296-24-627 - Fixed extinguishing systems, water spray and foam agents:

(1) Standard for Foam Extinguisher Systems, ANSI/NFPA 11; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for High-Expansion Foam Systems, ANSI/NFPA 11A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for Water Spray Fixed Systems for Fire Protection, ANSI/NFPA 15; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for the Installation of Foam-Water Sprinkler Systems and Foam-Water Spray Systems, ANSI/NFPA 16; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(I) WAC 296-24-629 - Fire detection systems:

(1) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard on Automatic Fire Detectors, ANSI/NFPA 72E; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(J) WAC 296-24-631 - Employee alarm systems:

(1) National Electrical Code, ANSI/NFPA 70; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(2) Standard for Central Station Signaling Systems, ANSI/NFPA 71; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(3) Standard for Local Protective Signaling Systems, ANSI/NFPA 72A; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(4) Standard for Auxiliary Protective Signaling Systems, ANSI/NFPA 72B; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(5) Standard for Remote Station Protective Signaling Systems, ANSI/NFPA 72C; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(6) Standard for Proprietary Protective Signaling Systems, ANSI/NFPA 72D; National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.

(7) Vocal Emergency Alarms in Hospitals and Nursing Facilities: Practice and Potential, National Bureau of Standards, Washington, D.C., July, 1977.

(8) Fire Alarm and Communication Systems, National Bureau of Standards, Washington, D.C., April, 1976.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63399, filed 12/24/81.]

WAC 296-24-63499 Appendix D--Availability of publications incorporated by references in WAC 296-24-58505--Fire brigades. The final standard for fire brigades, WAC 296-24-58505, contains provisions which incorporate certain publications by reference. The publications provide criteria and test methods for protective clothing worn by those fire brigade members who are expected to perform interior structural fire fighting. The standard references the publications as the chief sources of information for determining if the protective clothing affords the required level of protection.

It is appropriate to note that the final standard does not require employers to purchase a copy of the referenced publications. Instead, employers can specify (in purchase orders to the manufacturers) that the protective clothing meet the criteria and test methods contained in the referenced publications and can rely on the manufacturers assurances of compliance. Employers, however, may desire to obtain a copy of the referenced publications for their own information.

The paragraph designation of the standard where the referenced publications appear, the title of the publications, and the availability of the publications are as follows:

Paragraph Designation	Referenced Publication	Available From
WAC 296-24-58513 (3)(b)	"Protective Clothing for Structural Fire Fighting." NFPA No. 1971 (1975).	National Fire Protection Association, 470 Atlantic Avenue, Boston, MA 02210.
WAC 296-24-58513 (4)(a)	"Development of Criteria for Fire Fighter's Gloves; Vol. II, Part II: Test Methods" (1976)	U.S. Government Printing Office, Washington, D.C. 20402. Stock No. for Vol. II is: 071-033-021-1.
WAC 296-24-58513 (5)(a)	"Model Performance Criteria for Structural Firefighter's Helmets" (1977)	U.S. Fire Administration, National Fire Safety and Research Office, Washington, D.C. 20230.

The referenced publications (or a microfiche of the publications) are available for review at many universities and public libraries throughout the country. These publications may also be examined at the OSHA Technical Data Center, Room N2439-Rear, United States Department of Labor, 200 Constitution Avenue Northwest, Washington, D.C. 20210 (202-523-9700), or at any OSHA Regional Office (see telephone directories under United States Government-Labor Department).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-24-63499, filed 12/24/81.]

WAC 296-24-63599 Appendix E--Test methods for protective clothing. This appendix contains test methods which must be used to determine if protective clothing affords the required level of protection as specified in WAC 296-24-58505 - fire brigades.

(1) Puncture resistance test method for foot protection.

(a) Apparatus. The puncture resistance test shall be performed on a testing machine having a movable platform adjusted to travel at one–quarter–inch per minute. Two blocks of hardwood, metal, or plastic shall be prepared as follows: The blocks shall be of such size and thickness as to insure a suitable rigid test ensemble and allow for at least one–inch of the pointed end of an 8D nail to be exposed for the penetration. One block shall have a hole drilled to hold an 8D common nail firmly at an angle of 98–1/2. The second block shall have a maximum one–half inch diameter hole drilled through it so that the hole will allow free passage of the nail after it penetrates the insole during the test.

(b) Procedure. The test ensemble consisting of the sample unit, the two prepared blocks, a piece of leather outsole ten to eleven irons thick and a new 8D nail, shall be placed as follows: The 8D nail in the hole, the sample of outsole stock superimposed above the nail, the area of the sole plate to be tested placed on the outsole, and the second block with hole so placed as to allow for free passage of the nail after it passes through the outsole stock and sole plate in that order. The machine shall be started and the pressure, in pounds required for the nail to completely penetrate the outsole and sole plate, recorded to the nearest five pounds. Two determinations shall be made on each sole plate and the results averaged. A new nail shall be used for each determination.

(c) Source. These test requirements are contained in "Military Specification For Fireman's Boots," MIL–B–2885D (1973 and amendment dated 1975) and are reproduced for your convenience.

(2) Test method for determining the strength of cloth by tearing: Trapezoid method.

(a) Test specimen. The specimen shall be a rectangle of cloth three–inches by six–inches. The long dimension shall be parallel to the warp for warp tests and parallel to the filling for filling tests. No two specimens for warp tests shall contain the same warp yarns, nor shall any two specimens for filling tests contain the same filling yarns. The specimen shall be taken no nearer the selvage than 1/10 the width of the cloth. An isosceles trapezoid having an altitude of three inches and bases of one and four inches in length, respectively, shall be marked on each specimen, preferably with the aid of a template. A cut approximately three–eighths inch in length shall then be made in the center of a perpendicular to the one inch edge.

(b) Apparatus.

(i) Six–ounce weight tension clamps shall be used so designed that the six ounces of weight are distributed evenly across the complete width of the sample.

(ii) The machine shall consist of three main parts: Straining mechanism, clamps for holding specimen, and load and elongation recording mechanisms.

(iii) A machine wherein the specimen is held between two clamps and strained by a uniform movement of the pulling clamp shall be used.

(iv) The machine shall be adjusted so that the pulling clamp shall have a uniform speed of 12 ± 10.5 inches per minute.

(v) The machine shall have two clamps with two jaws on each clamp. The design of the two clamps shall be such that one gripping surface or jaw may be an integral part of the rigid frame of the clamp or be fastened to allow a slight vertical movement, while the other gripping surface or jaw shall be completely moveable. The dimension of the immovable jaw of each clamp parallel to the application of the load shall measure one inch, and the dimension of the jaw perpendicular to this direction shall measure three inches or more. The face of the moveable jaw of each clamp shall measure one inch by three inches.

Each jaw face shall have a flat, smooth, gripping surface. All edges which might cause a cutting action shall be rounded to a radius of not over 1/64 inch. In cases where a cloth tends to slip when being tested, the jaws may be faced with rubber or other material to prevent slippage. The distance between the jaws (gage length) shall be one inch at the start of the test.

(vi) Calibrated dial; scale or chart shall be used to indicate applied load and elongation. The machine shall be adjusted or set, so that the maximum load required to break the specimen will remain indicated on the calibrated dial or scale after the test specimen has ruptured.

(vii) The machine shall be of such capacity that the maximum load required to break the specimen shall be not greater than eighty–five percent or less than fifteen percent of the rated capacity.

(viii) The error of the machine shall not exceed two percent up to and including a fifty–pound load and one percent over a fifty–pound load at any reading within its loading range.

(ix) All machine attachments for determining maximum loads shall be disengaged during this test.

(c) Procedure.

(i) The specimen shall be clamped in the machine along the nonparallel sides of the trapezoid so that these sides lie along the lower edge of the upper clamp and the upper edge of the lower clamp with the cut halfway between the clamps. The short trapezoid base shall be held taut and the long trapezoid base shall lie in the folds.

(ii) The machine shall be started and the force necessary to tear the cloth shall be observed by means of an autographic recording device. The speed of the pulling clamp shall be 12 inches ± 0.5–inch per minute.

(iii) If a specimen slips between the jaws, breaks in or at the edges of the jaws, or if for any reason attributable to faulty technique, an individual measurement falls markedly below the average test results for the sample unit, such result shall be discarded and another specimen shall be tested.

(iv) The tearing strength of the specimen shall be the average of the five highest peak loads of resistance registered for three inches of separation of the tear.

(d) Report.

(i) Five specimens in each of the warp and filling direction shall be tested from each sample unit.

(ii) The tearing strength of the sample unit shall be the average of the result obtained from the specimens tested in each of the warp and filling directions and shall be reported separately to the nearest 0.1 pound.

(e) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5136," and are reproduced for your convenience.

(3) Test method for determining flame resistance of cloth; vertical.

(a) Test specimen. The specimen shall be a rectangle of cloth two and three–quarter inches (7.0 cm) by twelve inches (30.5 cm) with the long dimension parallel to either the warp or filling direction of the cloth. No two warp specimens shall contain the same warp yarns, and no two filling specimens shall contain the same filling yarn.

(b) Number of determinations. Five specimens from each of the warp and filling directions shall be tested from each sample unit.

(c) Apparatus.

(i) Cabinet. A cabinet and accessories shall be fabricated in accordance with the requirements specified in Figures L–1, L–2, and L–3. Galvanized sheet metal or other suitable metal shall be used. The entire inside back wall of the cabinet shall be painted black to facilitate the viewing of the test specimen and pilot flame.

(ii) Burner. The burner shall be equipped with a variable orifice to adjust the flame height, a barrel having a three–eighth inch (9.5 mm) inside diameter and a pilot light.

(A) The burner may be constructed by combining a three–eighth inch (9.5 mm) inside diameter barrel 3 ± 1/4–inches (76.2 ± 6.4 mm) long from a fixed orifice burner with a base from a variable orifice burner.

(B) The pilot light tube shall have a diameter of approximately one–sixteenth inch (1.6 mm) and shall be spaced one–eighth inch (3.2 mm) away from the burner edge with a pilot flame one–eighth inch (3.2 mm) long.

(C) The necessary gas connections and the applicable plumbing shall be as specified in Figure L–4 except that a solenoid valve may be used in lieu of the stopcock valve to which the burner is attached. The stopcock valve or solenoid valve, whichever is used, shall be capable of being fully opened or fully closed in 0.1 second.

(D) On the side of the barrel of the burner, opposite the pilot light there shall be a metal rod of approximately one–eighth inch (3.2 mm) diameter spaced one–half inch (12.7 mm) from the barrel and extending above the burner. The rod shall have two five–sixteenth inch (7.9 mm) prongs marking the distances of three–quarters inch (19 mm), and one and one–half inches (38.1 mm) above the top of the burner.

(E) The burner shall be fixed in a position so that the center of the barrel of the burner is directly below the center of the specimen.

(iii) There shall be a control valve system with a delivery rate designed to furnish gas to the burner under a pressure of 2–1/2 ± 1/4 pounds (1.1–kg ± 0.1–kg) per square inch at the burner inlet. The manufacturer's recommended delivery rate for the valve system shall be included in the required pressure.

(iv) A synthetic gas mixture shall be of the following composition within the following limits (analyzed at standard conditions): 55 ± 3 percent hydrogen, 24 ± 1 percent methane, 3 ± 1 percent ethane, and 18 ± 1 percent carbon monoxide which will give a specific gravity of 0.365 ± 0.018 (air = 1) and a B.T.U. content of 540 ± 20 per cubic foot (dry basis) at 69.8 F (21 C).

(v) There shall be metal hooks and weights to produce a series of total loads to determine length of char. The metal hooks shall consist of No. 19 gage steel wire or equivalent and shall be made from three inch (76.2 mm) lengths of wire and bent one–half inch (12.7 mm) from one end to a 45–degree hook. One end of the hook shall be fastened around the neck of the weight to be used.

(vi) There shall be a stop watch or other device to measure the burning time 0.2 second.

(vii) There shall be a scale, graduated in 0.1 inch (mm) to measure the length of char.

(d) Procedure.

(i) The material undergoing test shall be evaluated for the characteristics of after–flame time and char length on each specimen.

(ii) All specimens to be tested shall be at moisture equilibrium under standard atmospheric conditions in accordance with subsection (3)(c) of this appendix. Each specimen to be tested shall be exposed to the test flame within twenty seconds after removal from the standard atmosphere. In case of dispute, all testing will be conducted under standard atmospheric conditions in accordance with subsection (3)(c) of this appendix.

(iii) The specimen in its holder shall be suspended vertically in the cabinet in such a manner that the entire length of the specimen is exposed and the lower end is three–quarters inch (19 mm) above the top of the gas burner. The apparatus shall be set up in a draft–free area.

(iv) Prior to inserting the specimen, the pilot flame shall be adjusted to approximately one–eighth inch (3.2 mm) in height measured from its lowest point to the tip.

The burner flame shall be adjusted by means of the needle valve in the base of the burner to give a flame height of one and one–half inches (38.1 mm) with the stopcock fully open and the air supply to burner shut off and taped. The one and one–half inch (38.1 mm) flame height is obtained by adjusting the valve so that the uppermost portion (tip) of the flame is level with the tip of the metal prong (see Fig. L–2) specified for adjustment of flame height. It is an important aspect of the evaluation that the flame height to be adjusted with the tip of the flame level with the tip of the metal prong. After inserting the specimen, the stopcock shall be fully opened, and the burner flame applied vertically at the middle of the lower edge of the specimen for twelve seconds and the burner turned off. The cabinet door shall remain shut during testing.

(v) The after–flame shall be the time the specimen continues to flame after the burner flame is shut off.

(vi) After each specimen is removed, the test cabinet shall be cleared of fumes and smoke prior to testing the next specimen.

(vii) After both flaming and glowing have ceased, the char length shall be measured. The char length shall be the distance from the end of the specimen, which was

exposed to the flame, to the end of a tear (made lengthwise) of the specimen through the center of the charred area as follows: The specimen shall be folded lengthwise and creased by hand along a line through the highest peak of the charred area. The hook shall be inserted in the specimen (or a hole, one–quarter inch (6.4 mm) diameter or less, punched out for the hook) at one side of the charred area one–quarter inch (6.4 mm) from the adjacent outside edge and one–quarter inch (6.4 mm) in from the lower end. A weight of sufficient size such that the weight and hook together shall equal the total tearing load required in Table L–2 of this section shall be attached to the hook.

(viii) A tearing force shall be applied gently to the specimen by grasping the corner of the cloth at the opposite edge of the char from the load and raising the specimen and weight clear of the supporting surface. The end of the tear shall be marked off on the edge and the char length measurement made along the undamaged edge.

Loads for determining char length applicable to the weight of the test cloth shall be as shown in Table L–2.

TABLE L–2

Specified weight per square yard of cloth before any fire retardant treatment or coating – ounces	Total learning weight for determining the charred length – pound
2.0 to 6.0	0.25
Over 6.0 to 15.0	0.50
Over 15.0 to 23.0	0.75
Over 23.0	1.0

(ix) The after–flame time of the specimen shall be recorded to the nearest 0.2 second and the car length to the nearest 0.1 inch (1 mm).

(e) Report.

(i) The after–flame time and char length of the sample unit shall be the average of the results obtained from the individual specimens tested. All values obtained from the individual specimens shall be recorded.

(ii) The after–flame time shall be reported in the nearest 0.2 second and the char length to the nearest 0.1 inch (1 mm).

(f) Source. These test requirements are contained in "Federal Test Method Standard 191, Method 5903 (1971)," and are reproduced for your convenience.

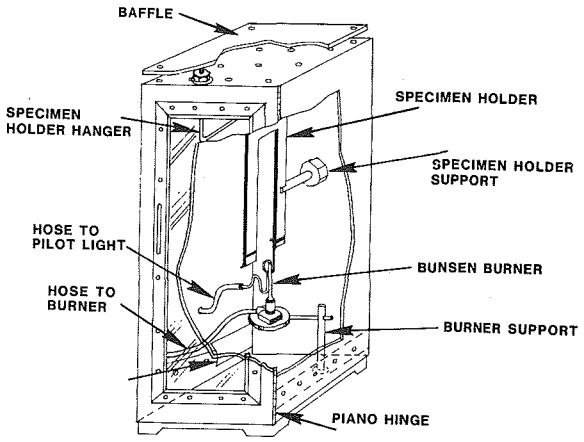


Figure L–1 – Vertical flame resistance textile apparatus.

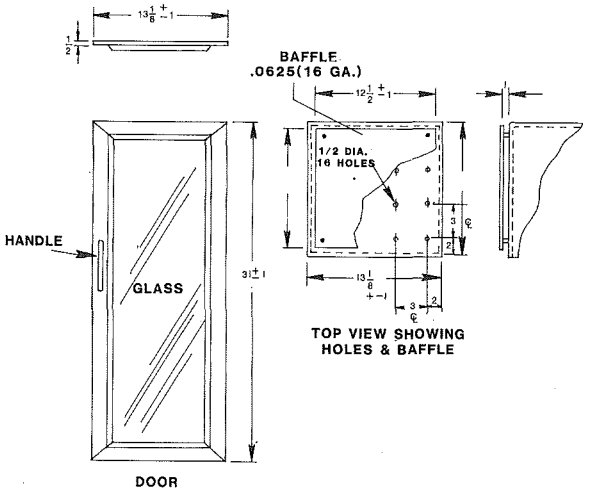


Figure L–2 – Vertical flame resistance textile apparatus, door and top view w/baffle.

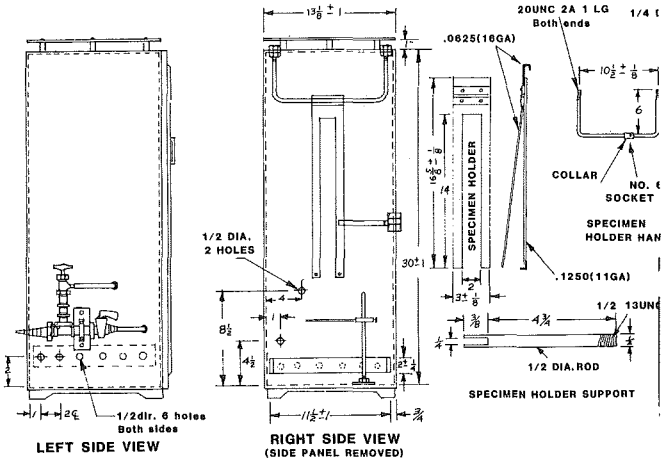


Figure L–3 – Vertical flame resistance textile apparatus, views and details.

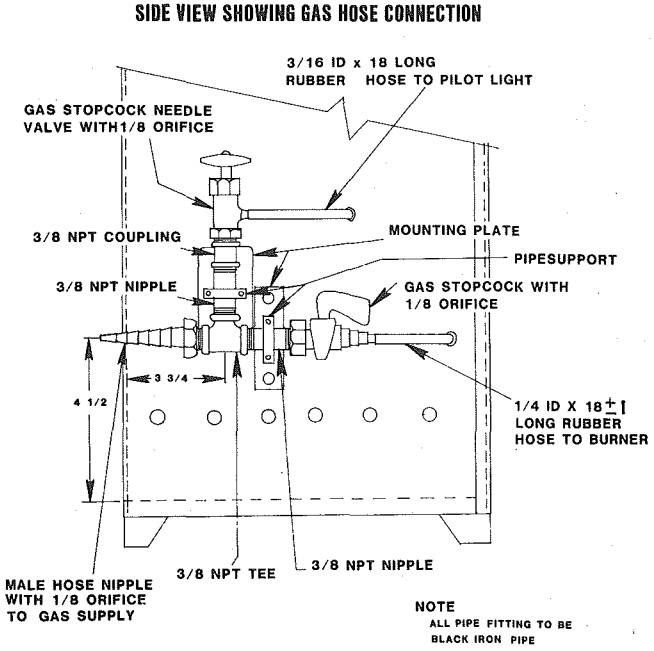


Figure L–4 – Vertical flame resistance textile apparatus.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–02–003 (Order 81–32), § 296–24–63599, filed 12/24/81.]

Part H–1

HAND AND PORTABLE POWERED TOOLS AND OTHER HAND–HELD EQUIPMENT

WAC

296–24–650 Hand and portable powered tools and equipment—General.
296–24–65001 General requirements.
296–24–65003 Compressed air used for cleaning.
296–24–65005 Compressed air tools.
296–24–65007 Air hammer.
296–24–655 Guarding of portable powered tools.
296–24–65501 Portable powered tools.
296–24–657 Pneumatic powered tools and hose.
296–24–65701 Portable tools.
296–24–65703 Airhose.
296–24–660 Portable abrasive wheels.
296–24–66001 Abrasive wheel terms.
296–24–66003 General requirements.
296–24–66005 Cup wheels.
296–24–66007 Vertical portable grinders.
296–24–66009 Other portable grinders.
296–24–66011 Mounting and inspection of abrasive wheels.
296–24–663 Safety requirements for powder actuated fastening systems.
296–24–66301 Scope.
296–24–66303 Purpose.
296–24–66305 Definitions applicable to this section.
296–24–66307 Requirements.
296–24–66309 Power loads.
296–24–66311 Fasteners.
296–24–66313 Operation.
296–24–66315 Limitations of use.
296–24–66317 Maintenance and storage.
296–24–66319 Authorized instructor.
296–24–66321 Qualified operator.
296–24–665 Power lawnmowers.
296–24–66501 Terms.
296–24–66503 General requirements.
296–24–66505 Walk–behind and riding rotary mowers.
296–24–66507 Walk–behind rotary mowers.
296–24–66509 Riding rotary mowers.
296–24–670 Jacks.
296–24–67001 Jack terms.
296–24–67003 Loading and marking.
296–24–67005 Operation and maintenance.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296–24–662 Safety requirements for explosive–actuated fastening tools. [Order 73–5, § 296–24–662, filed 5/9/73 and Order 73–4, § 296–24–662, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296–24–66201 Scope. [Order 73–5, § 296–24–66201, filed 5/9/73 and Order 73–4, § 296–24–66201, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296–24–66203 Purpose. [Order 73–5, § 296–24–66203, filed 5/9/73 and Order 73–4, § 296–24–66203, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296–24–66205 Definitions. [Order 73–5, § 296–24–66205, filed 5/9/73 and Order 73–4, § 296–24–66205, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49–.17.150, and 49.17.240.

296–24–66207 Design requirements—High velocity tools. [Order 73–5, § 296–24–66207, filed 5/9/73 and Order 73–4, § 296–24–66207, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296–24–66209 Low velocity piston tools. [Order 73–5, § 296–24–66209, filed 5/9/73 and Order 73–4, § 296–24–66209, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49–.17.040, 49.17.150, and 49.17.240.

296–24–66211 Hammer–operated piston tools—Low velocity type. [Order 73–5, § 296–24–66211, filed 5/9/73 and Order 73–4, § 296–24–66211, filed 5/7/73.] Repealed by 79–08–115 (Order 79–9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66213 Requirements for loads and fasteners. [Order 73-5, § 296-24-66213, filed 5/9/73 and Order 73-4, § 296-24-66213, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66215 Approvals. [Order 73-5, § 296-24-66215, filed 5/9/73 and Order 73-4, § 296-24-66215, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66217 Operation. [Order 73-5, § 296-24-66217, filed 5/9/73 and Order 73-4, § 296-24-66217, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66219 Servicing. [Order 73-5, § 296-24-66219, filed 5/9/73 and Order 73-4, § 296-24-66219, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49-.17.150, and 49.17.240.

296-24-66221 Qualification and certification of operators. [Order 73-5, § 296-24-66221, filed 5/9/73 and Order 73-4, § 296-24-66221, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

296-24-66223 Storage of explosive-actuated tools, instruction books, cleaning kits, and tools. [Order 73-5, § 296-24-66223, filed 5/9/73 and Order 73-4, § 296-24-66223, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49-.17.040, 49.17.150, and 49.17.240.

296-24-66225 Use low velocity tools when possible. [Order 73-5, § 296-24-66225, filed 5/9/73 and Order 73-4, § 296-24-66225, filed 5/7/73.] Repealed by 79-08-115 (Order 79-9), filed 7/31/79. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240.

WAC 296-24-650 Hand and portable powered tools and equipment--General.

[Order 73-5, § 296-24-650, filed 5/9/73 and Order 73-4, § 296-24-650, filed 5/7/73.]

WAC 296-24-65001 General requirements. Each employer shall be responsible for the safe condition of tools and equipment used by employees, including tools and equipment which may be furnished by employees.

[Order 73-5, § 296-24-65001, filed 5/9/73 and Order 73-4, § 296-24-65001, filed 5/7/73.]

WAC 296-24-65003 Compressed air used for cleaning. Compressed air shall not be used for cleaning purposes except where reduced to less than 30 p.s.i. and then only with effective chip guarding and personal protective equipment.

[Order 73-5, § 296-24-65003, filed 5/9/73 and Order 73-4, § 296-24-65003, filed 5/7/73.]

WAC 296-24-65005 Compressed air tools. (1) In the use of compressed air tools, care should be used to prevent the tool from being shot from the gun.

(2) When momentarily out of use the gun should be laid in such position that the tool cannot fly out if the pressure is accidentally released. When not in use, all tools should be removed from the gun.

(3) In disconnecting a compressed air tool from the air line, care should be exercised first to shut off the pressure and then to operate the tool to exhaust the pressure remaining in the hose.

(4) Compressed air hose or guns shall not be pointed at or brought into contact with the body of any person.

[Order 73-5, § 296-24-65005, filed 5/9/73 and Order 73-4, § 296-24-65005, filed 5/7/73.]

WAC 296-24-65007 Air hammer. (1) Before laying down an air hammer remove tool from hammer unless it is held in place by safety catch.

[Order 73-5, § 296-24-65007, filed 5/9/73 and Order 73-4, § 296-24-65007, filed 5/7/73.]

WAC 296-24-655 Guarding of portable powered tools.

[Order 73-5, § 296-24-655, filed 5/9/73 and Order 73-4, § 296-24-655, filed 5/7/73.]

WAC 296-24-65501 Portable powered tools. (1) Portable circular saws.

(a) All portable, power-driven circular saws having a blade diameter greater than 2 in. shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to covering position.

(b) (1)(a) of this section does not apply to circular saws used in the meat industry for meat cutting purposes.

(2) Switches and controls.

(a) All hand-held powered circular saws having a blade diameter-greater than 2 inches, electric, hydraulic or pneumatic chain saws, and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. All hand-held gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

(b) All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders with discs greater than 2 inches in diameter, belt sanders, reciprocating saws, saber, scroll, and jig saws with blade shanks greater than a nominal one-fourth inch, and other similarly operating powered tools shall be equipped with a constant pressure switch or control and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

(c) All other hand-held powered tools, such as, but not limited to, platen sanders, grinders with wheels 2 inches in diameter or less, disc sanders with discs 2 inches in diameter or less, routers, planers, laminate trimmers, nibblers, shears, saber, scroll, and jig saws with blade shanks a nominal one-fourth of an inch wide or less, may be equipped with either a positive "on-off"

control, or other controls as described by (2)(a) and (b) of this section.

(i) Saber, scroll, and jig saws with nonstandard blade holders may use blades with shanks which are nonuniform in width, provided the narrowest portion of the blade shank is an integral part in mounting the blade.

(ii) Blade shank width shall be measured at the narrowest portion of the blade shank when saber, scroll, and jig saws have nonstandard blade holders.

(iii) "Nominal" in this section means +0.05 inch.

(d) The operating control on hand-held power tools shall be so located as to minimize the possibility of its accidental operation, if such accidental operation would constitute a hazard to employees.

(e) This paragraph does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, medical or dental equipment, or to fixed machinery.

(3) Portable belt sanding machines. Belt sanding machines shall be provided with guards at each nip point where the sanding belt runs onto a pulley. These guards shall effectively prevent the hands or fingers of the operator from coming in contact with the nip points. The unused run of the sanding belt shall be guarded against accidental contact.

(4) Cracked saws. All cracked saws shall be removed from service.

(5) Grounding. Portable electric powered tools shall meet the electrical requirements of WAC 296-24-950 and 296-24-955.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-65501, filed 11/13/80; Order 74-27, § 296-24-65501, filed 5/7/74; Order 73-5, § 296-24-65501, filed 5/9/73 and Order 73-4, § 296-24-65501, filed 5/7/73.]

WAC 296-24-657 Pneumatic powered tools and hose.

[Order 73-5, § 296-24-657, filed 5/9/73 and Order 73-4, § 296-24-657, filed 5/7/73.]

WAC 296-24-65701 Portable tools. (1) The operating trigger on portable hand-operated utilization equipment shall be so located as to minimize the possibility of its accidental operation and shall be arranged to close the air inlet valve automatically when the pressure of the operator's hand is removed.

(2) A tool retainer shall be installed on each piece of utilization equipment which, without such a retainer, may eject the tool.

[Order 73-5, § 296-24-65701, filed 5/9/73 and Order 73-4, § 296-24-65701, filed 5/7/73.]

WAC 296-24-65703 Airhose. Hose and hose connections used for conducting compressed air to utilization equipment shall be designed for the pressure and service to which they are subjected.

[Order 73-5, § 296-24-65703, filed 5/9/73 and Order 73-4, § 296-24-65703, filed 5/7/73.]

WAC 296-24-660 Portable abrasive wheels.

[Order 73-5, § 296-24-660, filed 5/9/73 and Order 73-4, § 296-24-660, filed 5/7/73.]

WAC 296-24-66001 Abrasive wheel terms. (1) Mounted wheels. Mounted wheels, usually 2-inch diameter or smaller, and of various shapes, may be either organic or inorganic bonded abrasive wheels. They are secured to plain or threaded steel mandrels.

(2) Tuck pointing. Removal, by grinding, of cement, mortar, or other nonmetallic jointing material.

(3) Tuck pointing wheels. Tuck pointing wheels, usually Type 1, reinforced organic bonded wheels have diameter, thickness and hole size dimension. They are subject to the same limitations of use and mounting as Type 1 wheels defined in WAC 296-24-66001(10).

LIMITATION: Wheels used for tuck pointing should be reinforced, organic bonded.

(4) Portable grinding. A grinding operation where the grinding machine is designed to be hand held and may be easily moved from one location to another.

(5) Organic bonded wheels. Organic wheels are wheels which are bonded by means of an organic material such as resin, rubber, shellac, or other similar bonding agent.

(6) Safety guard. A safety guard is an enclosure designed to restrain the pieces of the grinding wheel and furnish all possible protection in the event that the wheel is broken in operation.

(7) Reinforced wheels. The term "reinforced" as applied to grinding wheels shall define a class of organic wheels which contain strengthening fabric or filament. The term "reinforced" does not cover wheels using such mechanical additions as steel rings, steel cup backs or wire or tape winding.

(8) Type 11 flaring cup wheels. Type 11 flaring cup wheels have double diameter dimensions D and J, and in addition have thickness, hole size, rim and back thickness dimensions. Grinding is always performed on rim face, W dimension. Type 11 wheels are subject to all limitations of use and mounting listed for Type 6 straight sided cup wheels definition in WAC 296-24-66001(9).

LIMITATION: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition when unthreaded hole wheels are specified the inside flat, K dimension, shall be large enough to accommodate a suitable flange.

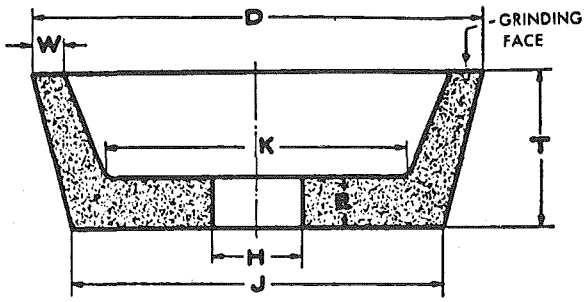


Figure P-1

Type 11—Flaring-cup wheel side grinding wheel having a wall flared or tapered outward from the back. Wall thickness at the back is normally greater than at the grinding face (W).

(9) Type 6 straight cup wheels. Type 6 cup wheels have diameter, thickness, hole size, rim thickness, and back thickness dimensions. Grinding is always performed on rim face, W dimension.

LIMITATION: Minimum back thickness, E dimension, should not be less than one-fourth T dimension. In addition, when unthreaded hole wheels are specified, the inside flat, K dimension, must be large enough to accommodate a suitable flange.

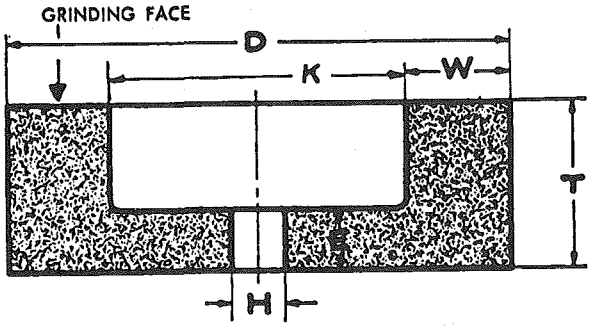


Figure P-2

Type 6—Straight-cup wheel

Side grinding wheel having a diameter, thickness and hole with one side straight or flat and the opposite side recessed. This type, however, differs from Type 5 in that the grinding is performed on the wall of the abrasive created by difference between the diameter of the recess and the outside diameter of the wheel. Therefore, the wall dimension "W" takes precedence over the diameter of the recess as an essential intermediate dimension to describe this shape type.

(10) Type 1 straight wheels. Type 1 straight wheels have a diameter, thickness, and hole size dimensions and should be used only on the periphery. Type 1 wheels shall be mounted between flanges.

LIMITATION: Hole dimension (H) should not be greater than two-thirds of wheel diameter dimension (D) for precision, cylindrical, centerless, or surface grinding applications. Maximum hole size for all other application should not exceed one-half wheel diameter.

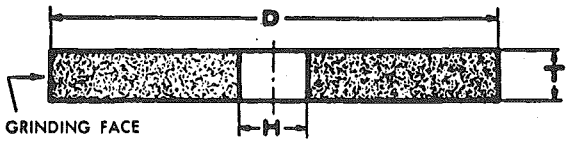


Figure P-3

Type 1—Straight wheel

Peripheral grinding wheel having a diameter, thickness and hole.

[Order 73-5, § 296-24-66001, filed 5/9/73 and Order 73-4, § 296-24-66001, filed 5/7/73.]

WAC 296-24-66003 General requirements. (1) All abrasive wheels shall be used only on machines provided with safety guards as defined in the following sections through WAC 296-24-66011.

EXCEPTIONS: This requirement shall not apply to the following classes of wheels and conditions.

(a) Wheels used for internal work while within the work being ground.

(b) Mounted wheels used in portable operations 2 inches and smaller in diameter.

(c) Types 16, 17, 18, 18R, and 19 cones and plugs and threaded hole pot balls as illustrated and described by 1.4.11 of ANSI B 7.1-1970 Safety Code for the Use, Care and Protection of Abrasive Wheels, where the work offers protection.

(2) The safety guard shall cover the spindle end, nut, and flange projections. The safety guard shall be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings shall exceed the strength of the guard.

(a) Exception: Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted.

(b) Exception: The spindle end, nut, and outer flange may be exposed on portable machines designed for, and used with, type 6, 11, 27, and 28 abrasive wheels, cutting off wheels, and tuck pointing wheels.

(c) Exception: The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

[Order 74-27, § 296-24-66003, filed 5/7/74; Order 73-5, § 296-24-66003, filed 5/9/73 and Order 73-4, § 296-24-66003, filed 5/7/73.]

WAC 296-24-66005 Cup wheels. Cup wheels (Types 6 and 11) shall be guarded by:

(1) Safety guards as specified in WAC 296-24-66003; or,

(2) Special "revolving cup guards" which mount behind the wheel and turn with it. They shall be made of steel or other material with adequate strength and shall enclose the wheel sides upward from the back for one-third of the wheel thickness. The mounting features shall conform with all regulations. (See WAC 296-24-66011.) It is necessary to maintain clearance between the wheel side and the guard. The clearance shall not exceed one-sixteenth inch; or,

(3) Some other form of guard that will insure as good protection as that which would be provided by the guards specified in WAC 296-24-66005 (1) or (2).

[Order 73-5, § 296-24-66005, filed 5/9/73 and Order 73-4, § 296-24-66005, filed 5/7/73.]

WAC 296-24-66007 Vertical portable grinders. Safety guards used on machines known as right angle head or vertical portable grinders shall have a maximum exposure angle of 180°, and the guard shall be located so as to be between the operator and the wheel during use. Adjustment of guard shall be such that pieces of an accidentally broken wheel will be deflected away from the operator. (See Figure P-4.)

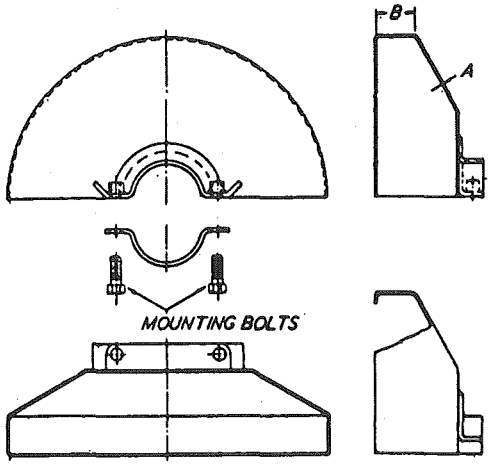


Figure No. P-4

[Order 73-5, § 296-24-66007, filed 5/9/73 and Order 73-4, § 296-24-66007, filed 5/7/73.]

WAC 296-24-66009 Other portable grinders. The maximum angular exposure of the grinding wheel periphery and sides for safety guards used on other portable grinding machines shall not exceed 180° and the top half of the wheel shall be enclosed at all times. (See Figures P-5 and P-6.)

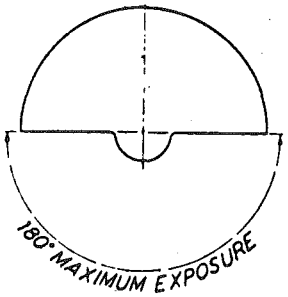


Figure No. P-5

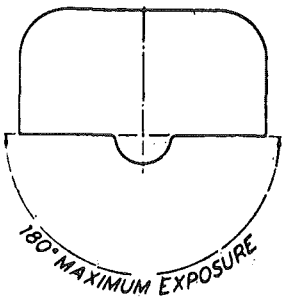


Figure No. P-6

[Order 73-5, § 296-24-66009, filed 5/9/73 and Order 73-4, § 296-24-66009, filed 5/7/73.]

WAC 296-24-66011 Mounting and inspection of abrasive wheels. (1) Immediately before mounting, all wheels shall be closely inspected and sounded by the user (ring test) to make sure they have not been damaged in transit, storage, or otherwise. The spindle speed of the machine shall be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel. Wheels should be tapped gently; if they sound cracked (dead), they shall not be used.

Note: Wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screwdriver for light wheels, or a wooden mallet for heavier wheels. This is known as the "ring test."

(2) Grinding wheels shall fit freely on the spindle and remain free under all grinding conditions. The machine spindle shall be made to nominal (standard) size plus zero minus .002 inch, and the wheel hole shall be made suitably oversize to assure safety clearance under the conditions of operating heat and pressure.

Note: A controlled clearance between the wheel hole and the machine spindle (or wheel sleeves or adaptors) is essential to avoid excessive pressure from mounting and spindle expansion.

(3) All contact surfaces of wheels, blotters, and flanges shall be flat and free of foreign matter.

(4) When a bushing is used in the wheel hole it shall not exceed the width of the wheel and shall not contact the flanges.

(5) For requirements for the use of flanges and blotters see WAC 296-24-18007.

Note: Excluded machinery. Natural sandstone wheels and metal, wooden, cloth, or paper discs, having a layer of abrasive on the surface are not covered by this section.

[Order 74-27, § 296-24-66011, filed 5/7/74; Order 73-5, § 296-24-66011, filed 5/9/73 and Order 73-4, § 296-24-66011, filed 5/7/73.]

WAC 296-24-663 Safety requirements for powder actuated fastening systems.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-663, filed 7/31/79.]

WAC 296-24-66301 Scope. This standard provides safety requirements for a powder actuated fastening tool or machine which propels a stud, pin, fastener, or other object for the purpose of affixing it by penetration to another object.

This standard does not apply to devices designed for attaching objects to soft construction materials, such as wood, plaster, tar, dry wallboard, and the like, or to stud welding equipment.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66301, filed 7/31/79.]

WAC 296-24-66303 Purpose. The purpose of this standard is to provide reasonable safety for life, limb, and property, by establishing requirements for design, construction, operation, service, and storage of powder actuated fastening tools, fasteners, and power loads.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66303, filed 7/31/79.]

WAC 296-24-66305 Definitions applicable to this section. (1) Angle control - a safety feature designed to prevent a tool from operating when tilted beyond a predetermined angle.

(2) Approved - meeting the requirements of this standard and acceptable to the department of labor and industries, division of industrial safety and health.

(3) Cased power load - a power load with the propellant contained in a closed case.

(4) Caseless power load - a power load with the propellant in solid form not requiring containment.

(5) Chamber (noun) - the location in the tool into which the power load is placed and in which it is actuated.

(6) Chamber (verb) - to fit the chamber according to manufacturer's specifications.

(7) Fasteners - any pins (unthreaded heads) or studs (threaded heads) driven by powder actuated tools.

(8) Fixture - a special shield that provides equivalent protection where the standard shield cannot be used.

(9) Head - that portion of a fastener that extends above the work surface after being properly driven.

(10) Misfire - a condition in which the power load fails to ignite after the tool has been operated.

(11) Powder actuated fastening system - a method comprising the use of a powder actuated tool, a power load, and a fastener.

(12) Powder actuated tool (also known as tool) - a tool that utilizes the expanding gases from a power load to drive a fastener.

(13) Power load - the energy source used in powder actuated tools.

(14) Qualified operator - a person who meets the requirements of WAC 296-24-66321 (1) and (2).

(15) Shield - a device, attached to the muzzle end of a tool, which is designed to confine flying particles.

(16) Spalled area - a damaged and nonuniform concrete or masonry surface.

(17) Test velocity - the measurement of fastener velocity performed in accordance with WAC 296-24-66307 (1)(m).

(18) Tools - tools can be divided into two types: Direct acting and indirect acting; and three classes: Low velocity, medium velocity, and high velocity.

(a) Direct-acting tool - a tool in which the expanding gas of the power load acts directly on the fastener to be driven.

(b) Indirect-acting tool - a tool in which the expanding gas of the power load acts on a captive piston, which in turn drives the fastener.

(c) Low-velocity tool - a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for that specific tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from the ten tests not in excess of 100 meters per second (328 feet per second) with no single test having a velocity of over 108 m/s (354 ft/s).

(d) Medium-velocity tool - a tool whose test velocity has been measured ten times while utilizing the highest velocity combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load that will properly chamber in the tool;

(iii) The piston designed for that tool and appropriate for that fastener; that will produce an average test velocity from ten tests in excess of 100 m/s (328 ft/s) but not in excess of 150 m/s (492 ft/s) with no single test having a velocity of 160 m/s (525 ft/s).

(e) High-velocity tool - a tool whose test velocity has been measured ten times while utilizing the combination of:

(i) The lightest commercially available fastener designed for the tool;

(ii) The strongest commercially available power load which will properly chamber in the tool; that will produce an average velocity from the ten tests in excess of 150 m/s (492 ft/s).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66305, filed 7/31/79.]

WAC 296-24-66307 Requirements. (1) General.

(a) The tool shall be designed to prevent inadvertent actuation.

(b) The tool shall be designed to prevent actuation when dropped in any attitude from a height of 3 meters (10 ft) onto a smooth, hard surface such as concrete or steel, if such actuation can propel a fastener or any part thereof in free flight.

(c) Actuation of the tool shall be dependent upon at least two separate and distinct operations by the operator, with at least one operation being separate from the operation of holding the tool against the work surface.

(d) The tool shall be designed not to be operable other than against a work surface with a force on the work surface equal to 22 newtons (5 lb.) greater than the

weight of the tool or a minimum impact energy of 4 joules (3 ft-lb).

(e) All tools shall be designed so that compatible protective shields or fixtures, designed, built, and supplied by the manufacturer of the tool, can be used (see WAC 296-24-66307 (2)(b), (3)(b), (4)(b) and 296-24-66313(8)).

(f) The tool shall be designed so that a determinable means of varying the power levels is available for selecting a power level adequate to perform the desired work (see WAC 296-24-66309(5)).

(g) The tool shall be designed so that all principal functional parts can be checked for foreign matter that may affect operation.

(h) The tool shall be designed so that all parts will be of adequate strength to resist maximum stresses imposed upon actuation when the tool is used in accordance with the manufacturer's instructions and is powered by any commercially available power load which will properly chamber in the tool.

(i) Each tool shall bear a legible permanent model designation, which shall serve as a means of identification. Each tool shall also bear a legible, permanent manufacturer's unique serial number.

(j) A lockable container shall be provided for each tool. The words "POWDER ACTUATED TOOL" shall appear in plain sight on the outside of the container. The following notice shall be attached on the inside cover of the container:

"WARNING - POWDER ACTUATED TOOL. TO BE USED ONLY BY A QUALIFIED OPERATOR AND KEPT UNDER LOCK AND KEY WHEN NOT IN USE."

(k) Each tool shall bear a durable warning label with the following statement, or the equivalent:

"WARNING - FOR USE ONLY BY QUALIFIED OPERATORS ACCORDING TO MANUFACTURER'S INSTRUCTION MANUAL."

(l) Each tool shall be supplied with the following:

(i) Operator's instruction and service manual.

(ii) Power load chart.

(iii) Tool inspection record.

(iv) Service tools and accessories.

(m) In determining tool test velocities, the velocity of the fastener shall be measured in free flight at a distance of 2 meters (6-1/2 ft) from the muzzle end of the tool, using accepted ballistic test methods.

(2) Design requirements - low-velocity class.

(a) Low-velocity tools, indirect-acting (piston) type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) A shield shall be supplied with each tool.

(3) Design requirements - medium-velocity class.

(a) Medium-velocity tools, indirect-acting (piston) type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) The tool shall have a shield at least 63 mm (2-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position if the bearing surface of the shield is tilted more than 12 degrees from a flat surface.

(4) Design requirements - high-velocity class.

(a) High-velocity tools, direct-acting or indirect-acting type, as defined in WAC 296-24-66305, shall meet the requirements of WAC 296-24-66307(1).

(b) The tool shall have a shield at least 88 mm (3-1/2 in) in diameter mounted perpendicular to, and concentric with, the muzzle end, when it is indexed to the center position. A special shield or fixture may be used when it provides equivalent protection.

(c) The tool shall be designed so that it cannot be actuated unless it is equipped with a shield or fixture.

(d) The tool shall be designed with angle control so that it will not actuate when equipped with the standard shield indexed to the center position, if the bearing surface of the shield is tilted more than eight degrees from a flat surface.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66307, filed 7/31/79.]

WAC 296-24-66309 Power loads. (1) Identification of cased power loads. Cased power loads shall be coded to identify power load levels by case color and power load color as specified in Table P-1.

(2) Identification of caseless power loads. Caseless power loads shall be coded to identify power load levels by power load color as specified in Table P-1 and by configuration.

(3) Power load use limitation. No power load (cased or caseless) shall be used if it will properly chamber in any existing commercially available tool and will cause a fastener to have a test velocity in excess of the maximum test velocities specified for the said tool.

(4) Identification of power load packages. Power load packages shall provide a visual number-color indication of the power level of the power load as specified in Table P-1.

(5) Optional power load variation. Where means other than power loads of varying power levels are to be used to control penetration, such means shall provide an equivalent power level variation.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66309, filed 7/31/79.]

WAC 296-24-66311 Fasteners. Fasteners for use in powder actuated tools shall be designed and manufactured to function compatibly with these tools and, when used in masonry, concrete, or steel, to effect properly the application for which they are recommended.

TABLE P-1

Power Load Identification

Power Level	Color Identification		Nominal velocity	
	Case Color	Load Color	Meters per Second (± 13.5)	Feet per Second (± 45)
1	Brass	Gray	91	300
2	Brass	Brown	119	390
3	Brass	Green	146	480
4	Brass	Yellow	174	570
5	Brass	Red	201	660
6	Brass	Purple	229	750
7	Nickel	Gray	256	840
8	Nickel	Brown	283	930
9	Nickel	Green	311	1020
10	Nickel	Yellow	338	1110
11	Nickel	Red	366	1200
12	Nickel	Purple	393	1290

Note: The nominal velocity applies to a 9.53 mm (3/8-in) diameter 22.7-gram (350-grain) ballistic slug fired in a test device and has no reference to actual fastener velocity developed in any specific tool.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66311, filed 7/31/79.]

WAC 296-24-66313 Operation. (1) Only tools meeting the requirements of this standard shall be used.

(2) Only qualified operators shall operate tools.

(3) The lowest velocity class of tool that will properly set the fastener shall be used.

(4) Tools shall be operated in strict accordance with the manufacturer's instructions.

(5) Eye or face protection, or both, shall be worn by operators, assistants, and adjacent personnel when tool is in use. Hearing protection shall be used when making fastenings in confined areas.

(6) Each day, prior to use, the operator shall inspect the tool to determine that it is in proper working condition in accordance with the testing methods recommended by the manufacturer of the tool.

(7) Any tool found not to be in proper working condition shall be immediately removed from service and tagged "DEFECTIVE"; it shall not be used until it has been properly repaired in accordance with the manufacturer's instructions.

(8) The proper shield, fixture, adapter, or accessory, suited for the application, as recommended and supplied by the manufacturer, shall be used.

(9) Only those types of fasteners and power loads recommended by the tool manufacturer shall be used.

(10) Before fastening into any questionable material, the operator shall determine its suitability by using a fastener as a center punch. If the fastener point does not easily penetrate, is not blunted, and does not fracture the material, initial test fastenings shall then be made in accordance with the tool manufacturer's recommendations. (See WAC 296-24-66315(3).)

(11) No tool shall be loaded unless it is being prepared for immediate use. If the work is interrupted after loading, the tool shall be unloaded at once.

(12) Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any person; hands shall be kept clear of the open barrel end.

(13) The tool shall always be held perpendicular to the work surface when fastening into any material, except for specific applications recommended by the tool manufacturer.

(14) In the event of a misfire, the operator shall hold the tool firmly against the work surface for a period of thirty seconds and then follow the explicit instructions set forth in the manufacturer's instructions.

(15) Power loads of different power levels and types shall be kept in separate compartments or containers.

(16) A sign, at least 20 x 25 cm (8 x 10 in), using boldface type no less than 2.5 cm (1 in) in height, shall be posted in plain sight on all construction projects where tools are used. The sign shall bear wording similar to the following: "POWDER ACTUATED TOOL IN USE."

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66313, filed 7/31/79.]

WAC 296-24-66315 Limitations of use. (1) The tool shall not be used in an explosive or flammable atmosphere.

(2) A tool shall never be left unattended in a place where it would be available to unauthorized persons.

(3) Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tile, hardened steel, glass block, natural rock, hollow tile, or most brick. (See WAC 296-24-66313(10).)

(4) Fasteners shall not be driven into easily penetrated or thin materials, or materials of questionable resistance, unless backed by a material that will prevent the fastener from passing completely through the other side.

(5) Fasteners shall not be driven closer than 13 mm (1/2 in) from the edge of steel except for specific applications recommended by the tool manufacturer.

(6) Fasteners shall not be driven closer than 7.5 cm (3 in) from the unsupported edge of masonry materials except for specific applications recommended by the tool manufacturer.

(7) Fasteners shall not be driven into concrete unless material thickness is at least three times the fastener shank penetration.

(8) Fasteners shall not be driven into any spalled area.

(9) Fasteners shall not be driven through existing holes unless a specific guide means, as recommended and supplied by the tool manufacturer, is used to ensure positive alignment.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66315, filed 7/31/79.]

WAC 296-24-66317 Maintenance and storage. (1) The tool shall be serviced and inspected for worn or damaged parts at regular intervals as recommended by the tool manufacturer. Prior to the tool being put back into use, all worn or damaged parts shall be replaced by a qualified person using only parts supplied by the tool

manufacturer. A record of this inspection shall be noted and dated on the tool inspection record.

(2) Instruction manuals, maintenance tools, and accessories supplied with the tool shall be stored in the tool container when not in use.

(3) Powder actuated tools and power loads shall be locked in a container and stored in a safe place when not in use and shall be accessible only to authorized personnel.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66317, filed 7/31/79.]

WAC 296-24-66319 Authorized instructor. (1) Only persons trained and authorized by the tool manufacturer or by an authorized representative of the tool manufacturer shall be qualified to instruct and qualify operators for the manufacturer's powder actuated tools.

(2) All authorized instructors shall have read and be familiar with this standard, and shall be capable of:

(a) Disassembling, servicing, and reassembling the tool.

(b) Recognizing any worn or damaged parts or defective operation.

(c) Recognizing and clearly identifying the colors used to identify power load levels.

(d) Using the tool correctly within the limitations of its use.

(e) Training and testing operators prior to issuing a qualified operator's card.

(3) All authorized instructors shall have in their possession a valid authorized instructor's card issued and signed by an authorized representative of the manufacturer. The card shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2 in), and the face of the card shall bear text similar to that shown in Figure P-1.

(4) A list of all instructors authorized by the manufacturer to instruct and qualify operators shall be maintained by the tool manufacturer and be made available to the department of labor and industries, division of industrial safety and health, upon request.

(5) An instructor's card may be revoked by the authorizing agent or the department of labor and industries, division of industrial safety and health, if he is known to have issued a qualified operator's card in violation of any regulation contained in this standard. When an instructor is no longer authorized to issue qualified operator's cards, he shall surrender his card to the authorizing agent or the department of labor and industries, division of industrial safety and health.

AUTHORIZED INSTRUCTOR

---------- Powder Actuated Tools Date -----
(MAKE)
Card No. ---------- Social Security No. ------
This certifies that ----------
(NAME OF INSTRUCTOR)
has received the prescribed training in the operation and maintenance of powder actuated tools manufactured by
---------- and is qualified
(NAME OF MANUFACTURER)
to train and certify operators of ----------
(MAKE)
powder actuated tools.
Model(s) ----------
Authorized by ----------
I have received instruction by the manufacturer's authorized representative in the training of operators of the above tools and agree to conform to all rules and regulations governing the instruction of tool operators.
Date of Birth ----------

(SIGNATURE)

Figure P-1
Sample of Authorized Instructor's Card

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66319, filed 7/31/79.]

WAC 296-24-66321 Qualified operator. (1) The operator shall be trained by an authorized instructor to be familiar with the provisions of this standard and the instructions provided by the manufacturer for operation and maintenance. The operator shall also be capable of:

(a) Reading and understanding the manufacturer's instruction manual.

(b) Cleaning the tool correctly.

(c) Recognizing any worn or damaged parts or defective operation.

(d) Recognizing the number-color code system used in this standard to identify power load levels. In the event the operator is unable to distinguish the colors used, he shall be given special instruction to enable him to avoid error.

(e) Using the tool correctly within the limitations of its use and demonstrating his competence by operating the tool in the presence of the instructor.

(2) After training, the operator shall, to substantiate his competency, satisfactorily complete a written examination provided by the manufacturer of the tool.

(a) The operator's written examination shall consist of questions to establish the operator's competence with respect to:

(i) The requirements of this standard;

(ii) The powder actuated fastening system; and

(iii) The specific details of operation and maintenance of the tool(s) involved.

(b) The examination shall provide a statement, attested to by the instructor, that the applicant can (or cannot) readily distinguish the colors used to identify power load levels (see WAC 296-24-66309).

(3) Each applicant who meets the requirements as set forth in subsections (1) and (2) of this section shall receive a qualified operator's card, issued and signed by both the instructor and applicant. While using the tool, the operator shall have this card in his possession.

(4) The qualified operator's card supplied by the manufacturer shall be wallet size of approximately 6 x 9 cm (2-1/2 x 3-1/2 in), and the face of the card shall bear text similar to that shown in Figure P-2.

(5) There shall be printed on the card a notation reading:

"Revocation of card – failure to comply with any of the rules and regulations for safe operation of powder actuated fastening tools shall be cause for the immediate revocation of this card."

QUALIFIED OPERATOR

---------- Powder Actuated Tools Date -----
(MAKE)
Card No. ---------- Social Security No. ------
This certifies that ----------
(NAME OF OPERATOR)
has received the prescribed training in the operation of powder actuated tools manufactured by
----
(NAME OF MANUFACTURER)
Model(s) ----------
Trained and issued by

(SIGNATURE OF AUTHORIZED INSTRUCTOR)
I have received instruction in the safe operation and maintenance of powder actuated fastening tools of the makes and models specified and agree to conform to all rules and regulations governing that use
Date of Birth ----------

(SIGNATURE)

Figure P-2
Sample of Qualified Operator's Card

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-66321, filed 7/31/79.]

WAC 296-24-665 Power lawnmowers.

[Order 73-5, § 296-24-665, filed 5/9/73 and Order 73-4, § 296-24-665, filed 5/7/73.]

WAC 296-24-66501 Terms. (1) Blade tip circle. The path described by the outermost point of the blade as it is rotated about its shaft axis.

(2) Guards. A part or an assembly provided for shielding a hazardous area of a machine.

(3) Catcher assemblies. Parts or combinations of parts which provide a means for collecting grass clippings or debris.

(4) Walk-behind mower. A mower either pushed or self-propelled and normally guided by the operator walking behind the unit.

(5) Operator area, walk-behind mowers. For discharge interference purposes, that area confined within a circle no smaller than 30 inches in diameter, the center of which is located to the rear of the mower on its longitudinal centerline 30 inches behind the nearest blade tip circle.

(6) Power reel mower. A lawn-cutting machine utilizing a power source to rotate one or more helically formed blades about a horizontal axis to provide a shearing action with a stationary cutter bar or bed knife.

(7) Power rotary mower. A lawn-cutting machine utilizing a power source to rotate one or more cutting blades about a vertical axis.

(8) Lowest blade position. The lowest blade position under static conditions.

(9) Riding mower. A powered, self-propelled lawn-cutting vehicle on which the operator rides and controls the machine.

(10) Sulky type mower. Normally, a walk-behind mower which has been converted to a riding mower by the addition of a sulky.

(11) Deadman control. A control designed so that it will automatically interrupt power to a drive when the operator's actuating force is removed.

[Order 73-5, § 296-24-66501, filed 5/9/73 and Order 73-4, § 296-24-66501, filed 5/7/73.]

WAC 296-24-66503 General requirements. (1) Power lawnmowers of the walk-behind, riding-rotary types, and reel power lawnmowers designed for use by employees shall meet the design specifications in "American National Standard Safety Specifications for Power Lawnmowers" ANSI B71.1-1968. These specifications do not apply to sulky-type mowers, flail mowers, sickle-bar mowers, or mowers designed for commercial use.

(2) All power-driven chains, belts, and gears shall be so positioned or otherwise guarded to prevent the operator's accidental contact therewith, during normal starting, mounting, and operation of the machine.

(3) A shutoff device shall be provided to stop operation of the motor or engine. This device shall require manual and intentional reactivation to restart the motor or engine.

(4) All positions of the operating controls shall be clearly identified.

(5) The words, "Caution. Be sure the operating control(s) is in neutral before starting the engine," or similar wording shall be clearly visible at an engine starting control point on self-propelled mowers.

[Order 76-6, § 296-24-66503, filed 3/1/76; Order 73-5, § 296-24-66503, filed 5/9/73 and Order 73-4, § 296-24-66503, filed 5/7/73.]

WAC 296-24-66505 Walk-behind and riding rotary mowers. (1) The mower blade shall be enclosed except on the bottom and the enclosure shall extend to or below the lowest cutting point of the blade in the lowest blade position.

(2) Guards which must be removed to install a catcher assembly shall comply with the following:

(a) Warning instructions shall be affixed to the mower near the opening stating that the mower shall not be used without either the catcher assembly or the guard in place.

(b) The catcher assembly or the guard shall be shipped and sold as part of the mower.

(c) The instruction manual shall state that the mower shall not be used without either the catcher assembly or the guard in place.

(d) The catcher assembly, when properly and completely installed, shall not create a condition which violates the limits given for the guarded opening.

(3) Openings in the blade enclosure, intended for the discharge of grass, shall be limited to a maximum vertical angle of the opening of 30°. Measurements shall be taken from the lowest blade position.

(4) The total effective opening area of the grass discharge opening(s) shall not exceed 1,000 square degrees on units having a width of cut less than 27 1/2 inches, or 2,000 square degrees on units having a width of cut 27 1/2 inches or over.

(5) The word "caution" or stronger wording, shall be placed on the mower at or near each discharge opening.

(6) Blade(s) shall stop rotating from the manufacturer's specified maximum speed within 15 seconds after declutching, or shutting off power.

(7) In a multipiece blade, the means of fastening the cutting members to the body of the blade or disc shall be so designed that they will not become worn to a hazardous condition before the cutting members themselves are worn beyond use.

(8) The maximum tip speed of any blade shall be 19,000 feet per minute.

[Order 74-27, § 296-24-66505, filed 5/7/74; Order 73-5, § 296-24-66505, filed 5/9/73 and Order 73-4, § 296-24-66505, filed 5/7/73.]

WAC 296-24-66507 Walk-behind rotary mowers. (1) The horizontal angle of the opening(s) in the blade enclosure, intended for the discharge of grass, shall not contact the operator area.

(2) There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(a) A minimum unobstructed horizontal distance of 3 inches from the end of the discharge chute to the blade tip circle.

(b) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.

(3) The highest point(s) on the front of the blade enclosure, except discharge openings, shall be such that any line extending a maximum of 15° downward from the horizontal toward the blade shaft axis (axes) shall not intersect the horizontal plane within the blade tip circle. The highest point(s) on the blade enclosure front, except discharge-openings, shall not exceed 1 and 1/4 inches above the lowest cutting point of the blade in the lowest blade position. Mowers with a swingover handle are to be considered as having no front in the blade enclosure and therefore shall comply with WAC 296-24-66505(1).

(4) The mower handle shall be fastened to the mower so as to prevent loss of control by unintentional uncoupling while in operation.

(5) A positive upstop or latch shall be provided for the mower handle in the normal operating position(s). The upstop shall not be subject to unintentional disengagement during normal operation of the mower. The upstop or latch shall not allow the center or the handle grips to come closer than 17 inches horizontally behind the closest path of the mower blade(s) unless manually disengaged.

(6) A swing-over handle, which complies with the above requirements, will be permitted.

(7) Wheel drive disengaging controls, except deadman controls, shall move opposite to the direction of the vehicle motion in order to disengage the drive. Deadman controls shall comply with WAC 296-24-66501(11) and may operate in any direction to disengage the drive.

[Order 74-27, § 296-24-66507, filed 5/7/74; Order 73-5, § 296-24-66507, filed 5/9/73 and Order 73-4, § 296-24-66507, filed 5/7/73.]

WAC 296-24-66509 Riding rotary mowers. (1) The highest point(s) of all openings in the blade enclosure, front shall be limited by a vertical angle of opening of 15° and a maximum distance of 1 1/4 inches above the lowest cutting point of the blade in the lowest blade position.

(2) Opening(s) shall be placed so that grass or debris will not discharge directly toward any part of an operator seated in a normal operator position.

(3) There shall be one of the following at all openings in the blade enclosure intended for the discharge of grass:

(a) A minimum unobstructed horizontal distance of 6 inches from the end of the discharge chute to the blade tip circle.

(b) A rigid bar fastened across the discharge opening, secured to prevent removal without the use of tools. The bottom of the bar shall be no higher than the bottom edge of the blade enclosure.

(4) Mowers shall be provided with stops to prevent jackknifing or locking of the steering mechanism.

(5) Vehicle stopping means shall be provided.

(6) Hand-operated wheel drive disengaging controls shall move opposite to the direction of vehicle motion in order to disengage the drive. Foot-operated wheel drive disengaging controls shall be depressed to disengage the drive. Deadman controls, both hand and foot operated, shall comply with WAC 296-24-66501(11) and may operate in any direction to disengage the drive.

[Order 74-27, § 296-24-66509, filed 5/7/74; Order 73-5, § 296-24-66509, filed 5/9/73 and Order 73-4, § 296-24-66509, filed 5/7/73.]

WAC 296-24-670 Jacks.

[Order 73-5, § 296-24-670, filed 5/9/73 and Order 73-4, § 296-24-670, filed 5/7/73.]

WAC 296-24-67001 Jack terms. (1) Jack. A jack is an appliance for lifting and lowering or moving horizontally a load by application of a pushing force.

Note: Jacks may be of the following types: Lever and ratchet, screw and hydraulic.

(2) Rating. The rating of a jack is the maximum working load for which it is designed to lift safely that load throughout its specified amount of travel.

Note: To raise the rated load of a jack, the point of application of the load, the applied force, and the length of lever arm should be those designated by the manufacturer for the particular jack considered.

[Order 73-5, § 296-24-67001, filed 5/9/73 and Order 73-4, § 296-24-67001, filed 5/7/73.]

WAC 296-24-67003 Loading and marking. (1) The operator shall make sure that the jack used has a rating sufficient to lift and sustain the load.

(2) The rated load shall be legibly and permanently marked in a prominent location on the jack by casting, stamping, or other suitable means.

[Order 73-5, § 296-24-67003, filed 5/9/73 and Order 73-4, § 296-24-67003, filed 5/7/73.]

WAC 296-24-67005 Operation and maintenance. (1) In the absence of a firm foundation, the base of the jack shall be blocked. If there is a possibility of slippage of the cap, a block shall be placed in between the cap and the load.

(2) The operator shall watch the stop indicator, which shall be kept clean, in order to determine the limit of travel. The indicated limit shall not be overrun.

(3) After the load has been raised, it shall immediately be cribbed, blocked, or otherwise secured.

(4) Hydraulic jacks exposed to freezing temperatures shall be supplied with an adequate antifreeze liquid.

(5) All jacks shall be properly lubricated at regular intervals. The lubricating instructions of the manufacturer should be followed, and only lubricants recommended by him should be used.

(6) Each jack shall be thoroughly inspected at times which depend upon the service conditions. Inspections shall be not less frequent than the following:

(a) For constant or intermittent use at one locality, once every 6 months,

(b) For jacks sent out of shop for special work, when sent out and when returned,

(c) For a jack subjected to abnormal load or shock, immediately before and immediately thereafter.

(7) Repair or replacement parts shall be examined for possible defects.

(8) Jacks which are out of order shall be tagged accordingly, and shall not be used until repairs are made.

[Order 73-5, § 296-24-67005, filed 5/9/73 and Order 73-4, § 296-24-67005, filed 5/7/73.]

Part H-2

SAFE PRACTICES OF ABRASIVE BLASTING OPERATIONS, VENTILATION

WAC

296-24-675 Safe practices of abrasive blasting operations.
296-24-67501 Purpose.
296-24-67503 Application.
296-24-67505 Selection of abrasives and equipment.
296-24-67507 Definitions.
296-24-67509 Dust hazards from abrasive blasting.
296-24-67511 Blast cleaning enclosures.
296-24-67513 Exhaust ventilation systems.
296-24-67515 Personal protective equipment.
296-24-67517 Air supply and air compressors.
296-24-67519 Operational procedures and general safety.
296-24-677 Ventilation.
296-24-67701 Scope.

WAC 296-24-675 Safe practices of abrasive blasting operations.

[Order 73-5, § 296-24-675, filed 5/9/73 and Order 73-4, § 296-24-675, filed 5/7/73.]

WAC 296-24-67501 Purpose. The safety and health standards of this section are intended to protect health and to prevent injury to personnel engaged in abrasive blasting operations and to others working in the vicinity by:

(1) Control of dusts which are dispersed during abrasive blasting.

(2) Provision of an adequate amount of clean air to personnel.

(3) Protection of personnel from injury from flying particles or from moving equipment.

[Order 73-5, § 296-24-67501, filed 5/9/73 and Order 73-4, § 296-24-67501, filed 5/7/73.]

WAC 296-24-67503 Application. This standard applies to all operations where an abrasive is forcibly applied to a surface by pneumatic or hydraulic pressure or by centrifugal force. It does not apply to steam blasting, or steam cleaning, or hydraulic cleaning methods where this work is done without the aid of abrasives.

[Order 73-5, § 296-24-67503, filed 5/9/73 and Order 73-4, § 296-24-67503, filed 5/7/73.]

WAC 296-24-67505 Selection of abrasives and equipment. Each type of abrasive and each type of equipment has its particular advantages in producing the quality of work desired, and the selection will depend on the specific requirements of the user. Therefore, no rule or suggestion can be given in this standard for the selection of a particular abrasive or of particular equipment. With properly designed equipment and proper operation and maintenance all types of abrasives and equipment can be used safely. However, abrasives which create the minimum hazard should be used wherever feasible.

[Order 73-5, § 296-24-67505, filed 5/9/73 and Order 73-4, § 296-24-67505, filed 5/7/73.]

WAC 296-24-67507 Definitions. (1) Abrasive. A solid substance used in an abrasive blasting operation.

(2) Abrasive blasting. The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(3) Abrasive-blasting respirator. A continuous flow airline respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

(4) Air-line respirator. A device consisting of a face-piece, helmet, or hood to which clean air is supplied to the wearer through a small-diameter hose from a source not on the wearer's body.

(5) Blast cleaning barrel. A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.

(6) Blast cleaning room. A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(7) Blasting cabinet. An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(8) Clean air. Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.

(9) Dust collector. A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(10) Exhaust ventilation system. A system for removing contaminated air from a space, comprising two or more of the elements; (a) enclosure or hood, (b) duct work, (c) dust collecting equipment, (d) exhauster, and (e) discharge stack.

(11) Particulate–filter respirator. An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(12) Respirable dust. Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(13) Rotary blast cleaning table. An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

[Order 73–5, § 296–24–67507, filed 5/9/73 and Order 73–4, § 296–24–67507, filed 5/7/73.]

WAC 296–24–67509 Dust hazards from abrasive blasting. (1) Dust sources. Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(2) Types of abrasives. A large variety of solid materials may be used as abrasives, with qualities varying from hard deep–cutting to soft polishing. These include; (a) mineral grains, either synthetic or natural, (b) metallic shot or grit, generally of steel or chilled cast iron, and (c) organic abrasives, such as ground corncobs or walnut shells.

Silica sand is the most hazardous mineral abrasive commonly used and its use should be limited wherever possible.

The potential hazard from steel or iron dust is considered to be minimal.

Readily combustible organic abrasives may be pulverized fine enough to be capable of forming explosive mixtures with air.

(3) Types of coatings. A surface coating formed during the fabrication of a part, or a protective coating applied after fabrication, will be removed and dispersed as a dust by abrasive blasting. The type of coating should be known to make a proper evaluation of the potential hazard.

(a) Silica sand is frequently imbedded in the surface of castings and may be pulverized by blast cleaning.

(b) Coatings containing toxic metals will add to the potential seriousness of the dust exposures. Examples of such coatings are anti–fouling paints containing mercury, lead paints on structural steel, cadmium plating, and lead deposits on pistons of internal combustion engines.

(c) Plastic or resin coatings may be decomposed by the action of the abrasives to form irritating by–products.

(4) Wet abrasive blasting. Wet methods will tend to keep dust exposures minimal, but droplets dispersed and dried residues which become airborne may create potential exposures.

(5) Concentrations of contaminants. The concentration of respirable dust or fumes in the breathing zone of the abrasive–blasting operator or any other worker shall be kept below the levels recommended by chapter 296–62 WAC.

(6) Use of combustible abrasives. Organic abrasives which are combustible shall be used only in automatic systems because the fine dust produced presents a potential fire and explosion hazard.

(a) Where flammable or explosive dust mixtures may be present, the construction of the equipment, including the exhaust system and all electric wiring shall conform to the requirements of American National Standard Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal or Conveying, Z 33.1–1961 (NFPA 91–1961; NBFU 91–1961), and American National Standard National Electrical Code, C1–1968 (NFPA 70–1968). The blast nozzle shall be bonded and grounded to prevent the buildup of static charges.

(b) Where flammable or explosive dust mixtures may be present, the abrasive blasting enclosure, the ducts, and the dust collector shall be constructed with loose panels or explosion venting areas, located on sides away from any occupied area, to provide for pressure relief in case of explosion, following the principles set forth in the National Fire Protection Association Explosion Venting Guide, NFPA 68–1954.

[Order 73–5, § 296–24–67509, filed 5/9/73 and Order 73–4, § 296–24–67509, filed 5/7/73.]

WAC 296–24–67511 Blast cleaning enclosures. (1) Blast cleaning enclosures. These include rotary blast cleaning tables, blast cleaning barrels and drums, abrasive blasting cabinets, blast cleaning rooms, abrasive separators, and similar enclosures.

(2) Ventilation. Blast cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation. (See WAC 296–24–677.)

(3) All air inlets and access openings shall be baffled or so arranged that by the combination of inward air flow and baffling the escape of abrasive or dust particles into an adjacent work area will be minimized, not to exceed the allowable threshold limits as specified in occupational health standards, chapter 296–62 WAC.

(4) The rate of exhaust shall be sufficient to provide prompt clearance of the dust–laden air within the enclosure after the cessation of blasting.

(5) Before the enclosure is opened, the blast shall be turned off and the exhaust system shall be run for a sufficient period of time to remove the airborne dust particles within the enclosure.

(6) Observation window. Safety glass protected by screening shall be used in observation windows, where hard deep-cutting abrasives are used.

(7) Access openings. Slit abrasive-resistant baffles shall be installed in multiple sets at all small access openings where dust might escape, and shall be inspected regularly and replaced when needed.

(8) Doors shall be flanged and tight when closed.

[Order 73-5, § 296-24-67511, filed 5/9/73 and Order 73-4, § 296-24-67511, filed 5/7/73.]

WAC 296-24-67513 Exhaust ventilation systems. (1) Exhaust systems. The construction, installation, inspection, and maintenance of exhaust systems shall conform to the principles and requirements set forth in chapter 296-62 WAC.

(2) When dust leaks are noted, repairs shall be made.

(3) The static pressure drop at the exhaust ducts leading from the equipment shall be checked when the installation is completed and periodically thereafter to assure continued satisfactory operation. Whenever an appreciable change in the pressure drop indicates a partial blockage, the system shall be cleaned and returned to normal operating conditions.

(4) Abrasive separator. In installations where the abrasive is recirculated, the exhaust ventilation system for the blasting enclosure shall not be relied upon for the removal of fines from the spent abrasive instead of an abrasive separator. An abrasive separator shall be provided for the purpose.

(5) Dust collecting equipment. The air exhausted from blast cleaning equipment shall be discharged through dust collecting equipment.

(6) Dust collectors shall be set up so that the accumulated dust can be emptied and removed without contaminating other working areas.

Note: Disposal of waste. The fine dust from dry collectors should be emptied into and transported in enclosed containers to prevent dispersal of the fines, or discharged into a sluice with some method to assure wetting of the dust.

[Order 73-5, § 296-24-67513, filed 5/9/73 and Order 73-4, § 296-24-67513, filed 5/7/73.]

WAC 296-24-67515 Personal protective equipment. (1) Abrasive-blasting respirators. Abrasive-blasting respirators shall be worn by all abrasive-blasting operators (a) when working inside of blast cleaning rooms, or (b) when using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure, or (c) where concentrations of toxic dusts dispersed by the abrasive blasting may exceed the limits set in chapter 296-62 WAC.

(2) Particulate-filter respirators. Particulate-filter respirators, commonly referred to as dust-filter respirators, properly fitted, may be used for short, intermittent, or occasional dust exposures such as clean-up, dumping of dust collectors, or unloading shipments of sand at a receiving point, when it is not feasible to control the dust by enclosure, exhaust ventilation, or other means. Respirators used shall be approved for protection against the specific type of dust encountered.

(a) Dust-filter respirators shall not be used for continuous protection where silica sand is used as the blasting abrasive, or toxic materials are blasted.

(3) Personal protective clothing. Operators shall be equipped with heavy canvas or leather gloves and aprons or equivalent protection to protect them from the impact of abrasives. Safety shoes shall be worn where there is a hazard of foot injury.

(4) Personal protective clothing, equipment and their use shall comply with the provisions of WAC 296-24-07501, 296-24-07801, 296-24-08101 through 296-24-08113, 296-24-084, and 296-24-088.

[Order 73-5, § 296-24-67515, filed 5/9/73 and Order 73-4, § 296-24-67515, filed 5/7/73.]

WAC 296-24-67517 Air supply and air compressors. (1) Clean air supply. The air for abrasive-blasting respirators shall be free of harmful quantities of dusts, mists, or noxious gases, and shall meet the requirements for air purity set forth in American National Standard Z 9.2-1960.

Note: It is preferable to provide air for an abrasive-blasting respirator by means of low pressure blowers or compressors, which do not require internal organic lubricants and which are used solely for that purpose.

(a) When air from the regular compressed air line of the plant is used for the abrasive-blasting respirator the following shall be complied with: A trap and carbon filter will be installed and regularly maintained, to remove oil, water, scale, and odor; a pressure reducing diaphragm or valve will be installed to reduce the pressure down to requirements of the particular type of abrasive-blasting respirator; and an automatic control will be provided to either sound an alarm or shut down the compressor in case of over-heating.

[Order 73-5, § 296-24-67517, filed 5/9/73 and Order 73-4, § 296-24-67517, filed 5/7/73.]

WAC 296-24-67519 Operational procedures and general safety. (1) Housekeeping. Dusts shall not be permitted to accumulate on the floor or on ledges outside of an abrasive blasting enclosure, and dust spills shall be cleaned up promptly, preferable by vacuum cleaning.

Note: Removal of dust accumulations from ledges and other dust catching surfaces should be done with a vacuum cleaner during a time when the plant is not in operation. The cleaning operator should wear a respirator approved for the existing conditions.

(a) Aisles and walkways shall be kept clear of steel shot or similar abrasive which may create a slipping hazard.

Note: Pressurized tanks for abrasive supply. If a pressurized tank is used for an abrasive supply, it should be tied in with the manual control of the nozzle mentioned in WAC 296-24-65719(2) and the relief valve or opening on the tank should be located so as to be safely vented.

(2) Nozzles. Blast cleaning nozzle shall be equipped with an operating valve which must be held open manually. A support shall be provided on which the nozzle may be mounted when it is not in use.

(3) Tempered air. If taken directly from the outside of the building, the air entering a blast cleaning room through the air supply inlets should be tempered during cold weather.

[Order 73-5, § 296-24-67519, filed 5/9/73 and Order 73-4, § 296-24-67519, filed 5/7/73.]

WAC 296-24-677 Ventilation.

[Order 73-5, § 296-24-677, filed 5/9/73 and Order 73-4, § 296-24-677, filed 5/7/73.]

WAC 296-24-67701 Scope. The applicable minimum requirements as specified in chapter 296-62 WAC relating to ventilation and the following rules shall be complied with:

(1) Blast cleaning enclosures. Blast cleaning enclosures shall be exhaust ventilated in such a way that a continuous inward flow of air will be maintained at all openings in the enclosure, during the blasting operation.

(2) Inlet baffled. Because of the wide variety of conditions, it is not possible to set rigid standards for rates of exhaust or for control velocities that will be suited to all types of enclosures and all types of work. In general, the use of free silica abrasives and the generation of toxic dusts in abrasive blasting require higher control velocities. With well designed equipment and excellent labyrinth baffling at openings it is possible to prevent the escape of abrasives and dust with lower control velocities.

(3) Air velocities. The performance of the equipment will be the final criterion and the exhaust ventilation must (a) keep the escape of dust from the enclosure to a minimum, (b) maintain a reasonable visibility in blast cleaning rooms and cabinets, and (c) provide for rapid clearance of the dust laden air within the enclosure to permit the enclosure to be opened. Experience has indicated control velocities that are needed to minimize the escape of dust from enclosures and these are given in the following subsections.

(4) Blast cleaning cabinet. The recommended inward air velocity at the hand openings is a minimum of 500 fpm calculated on the free opening without the curtains. The high control velocity is needed because the operator's working position is close to the openings.

(5) Rotary blast cleaning tables. The access openings should be baffled with multiple slit-baffle curtains. The recommended inward air velocity at the access opening is 200 to 250 fpm calculated on the free opening without the curtains.

(6) Blast cleaning rooms. In blast cleaning rooms, the air inlets must be well baffled to prevent the escape of abrasive and the recommended inward air velocity at the air inlets is a minimum of 300 feet per minute.

(7) Abrasive separators, bucket elevators, and other accessory abrasive handling systems. The recommended inward air velocity at all openings is 200 to 250 fpm.

[Order 73-5, § 296-24-67701, filed 5/9/73 and Order 73-4, § 296-24-67701, filed 5/7/73.]

Part I
WELDING, CUTTING AND BRAZING

WAC

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WAC 296-24-680 Welding, cutting, and brazing.

[Order 73-5, § 296-24-680, filed 5/9/73 and Order 73-4, § 296-24-680, filed 5/7/73.]

WAC 296-24-68001 Definitions. (1) "Welder" and "welding operator" mean any operator of electric or gas welding and cutting equipment.

(2) "Approved" means listed or approved by a nationally recognized testing laboratory, such as Factory

Mutual Engineering Corp., or Underwriters' Laboratories, Inc.

(3) All other welding terms are used in accordance with American Welding Society–Terms and Definitions–A3.0–1969.

[Order 73–5, § 296–24–68001, filed 5/9/73 and Order 73–4, § 296–24–68001, filed 5/7/73.]

WAC 296-24-682 Installation and operation of oxygen fuel gas systems for welding and cutting.

[Order 73–5, § 296–24–682, filed 5/9/73 and Order 73–4, § 296–24–682, filed 5/7/73.]

WAC 296-24-68201 General requirements. (1) Flammable mixture. Mixtures of fuel gases and air or oxygen may be explosive and shall be guarded against. No device or attachment facilitating or permitting mixtures of air or oxygen with flammable gases prior to consumption, except at the burner or in a standard torch, shall be allowed unless approved for the purpose.

(2) Maximum pressure. Under no condition shall acetylene be generated, piped (except in approved cylinder manifolds) or utilized at a pressure in excess of 15 p.s.i. gage pressure or 30 p.s.i. absolute pressure. (The 30 p.s.i. absolute pressure limit is intended to prevent unsafe use of acetylene in pressurized chambers such as caissons, underground excavations or tunnel construction.) This requirement does not apply to storage of acetylene dissolved in a suitable solvent in cylinders manufactured and maintained according to U.S. Department of Transportation requirements, or to acetylene for chemical use. The use of liquid acetylene shall be prohibited.

(3) Apparatus. Only approved apparatus such as torches, regulators or pressure–reducing valves, acetylene generators, and manifolds shall be used.

(4) Personnel. Workmen in charge of the oxygen or fuel–gas supply equipment, including generators, and oxygen or fuel–gas distribution piping systems shall be instructed and judged competent by their employers for this important work before being left in charge. Rules and instructions covering the operation and maintenance of oxygen or fuel–gas supply equipment including generators, and oxygen or fuel–gas distribution piping systems shall be readily available.

[Order 73–5, § 296–24–68201, filed 5/9/73 and Order 73–4, § 296–24–68201, filed 5/7/73.]

WAC 296-24-68203 Cylinders and containers. (1) Approval and marking. All portable cylinders used for the storage and shipment of compressed gases shall be constructed and maintained in accordance with the regulations of the U.S. Department of Transportation, 49 CFR Parts 171–179.

(a) Compressed gas cylinders shall be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking shall be by means of stenciling, stamping, or labeling, and shall not be readily removable. Whenever practical, the marking shall be located on the shoulder of the cylinder.

Note: This method conforms to the American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z 48.1–1954.

(b) Compressed gas cylinders shall be equipped with connections complying with the American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI B 57.1–1965.

(c) All cylinders with a water weight capacity of over 30 pounds shall be equipped with means of connecting a valve protection cap or with a collar or recess to protect the valve.

(2) Storage of cylinders – general.

(a) Cylinders shall be kept away from radiators and other sources of heat.

(b) Inside of buildings, cylinders shall be stored in a well–protected, well–ventilated, dry location, at least 20 feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

(c) Empty cylinders shall have their valves closed.

(d) Valve protection caps, where cylinder is designed to accept a cap, shall always be in place, hand–tight, except when cylinders are in use or connected for use.

(3) Fuel–gas cylinder storage. Inside a building, cylinders, except those in actual use or attached ready for use, shall be limited to a total gas capacity of 2,000 cubic feet or 300 pounds of liquefied petroleum gas.

(a) For storage in excess of 2,000 cubic feet total gas capacity of cylinders or 300 pounds of liquefied petroleum gas, a separate room or compartment conforming to the requirements specified in WAC 296–24–68211 (6)(h) and (i) shall be provided, or cylinders shall be kept outside or in a special building. Special buildings, rooms or compartments shall have no open flame for heating or lighting and shall be well ventilated. They may also be used for storage of calcium carbide in quantities not to exceed 600 pounds, when contained in metal containers complying with WAC 296–24–68213 (1)(a) and (b). Signs should be conspicuously posted in such rooms reading, "Danger—No smoking, matches or open lights," or other equivalent wording.

(b) Acetylene cylinders shall be stored valve end up.

(4) Oxygen storage.

(a) Oxygen cylinders shall not be stored near highly combustible material, especially oil and grease; or near reserve stocks of carbide and acetylene or other fuel–gas cylinders, or near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment.

(b) Oxygen cylinders stored in outside generator houses shall be separated from the generator or carbide storage rooms by a noncombustible partition having a fire–resistance rating of at least 1 hour. This partition shall be without openings and shall be gastight.

(c) Oxygen cylinders in storage shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(d) Where a liquid oxygen system is to be used to supply gaseous oxygen for welding or cutting and the system has a storage capacity of more than 13,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), including unconnected reserves on hand at the site, it shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

(5) Operating procedures.

(a) Cylinders, cylinder valves, couplings, regulators, hose, and apparatus shall be kept free from oily or greasy substances. Oxygen cylinders or apparatus shall not be handled with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

(b) When transporting cylinders by a crane or derrick, a cradle, boat, or suitable platform shall be used. Slings or electric magnets shall not be used for this purpose. Valve-protection caps, where cylinder is designed to accept a cap, shall always be in place.

(c) Cylinders shall not be dropped or struck or permitted to strike each other violently.

(d) Valve-protection caps shall not be used for lifting cylinders from one vertical position to another. Bars shall not be used under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve-protection caps are designed to protect cylinder valves from damage.

(e) Unless cylinders are secured on a special truck, regulators shall be removed and valve-protection caps, when provided for, shall be put in place before cylinders are moved.

(f) Cylinders not having fixed hand wheels shall have keys, handles, or nonadjustable wrenches on valve stems while these cylinders are in service. In multiple cylinder installations only one key or handle is required for each manifold.

(g) Cylinder valves shall be closed before moving cylinders.

(h) Cylinder valves shall be closed when work is finished.

(i) Valves of empty cylinders shall be closed.

(j) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them, or fire-resistant shields shall be provided.

(k) Cylinders shall not be placed where they might become part of an electric circuit. Contacts with third rails, trolley wires, etc., shall be avoided. Cylinders shall be kept away from radiators, piping systems, layout tables, etc., that may be used for grounding electric circuits such as for arc welding machines. Any practice such as the tapping of an electrode against a cylinder to strike an arc shall be prohibited.

(l) Cylinders shall never be used as rollers or supports, whether full or empty.

(m) The numbers and markings stamped into cylinders shall not be tampered with.

(n) No person, other than the gas supplier, shall attempt to mix gases in a cylinder. No one, except the owner of the cylinder or person authorized by him, shall refill a cylinder.

(o) No one shall tamper with safety devices in cylinders or valves.

(p) Cylinders shall not be dropped or otherwise roughly handled.

(q) Unless connected to a manifold, oxygen from a cylinder shall not be used without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, the valve shall be opened slightly for an instant and then closed. (Always stand to one side of the outlet when opening the cylinder valve.)

(r) A hammer or wrench shall not be used to open cylinder valves. If valves cannot be opened by hand, the supplier shall be notified.

(s) Cylinder valves shall not be tampered with nor should any attempt be made to repair them. If trouble is experienced, the supplier should be sent a report promptly indicating the character of the trouble and the cylinder's serial number. Supplier's instructions as to its disposition shall be followed.

(t) Complete removal of the stem from a diaphragm-type cylinder valve shall be avoided.

(u) Fuel-gas cylinders shall be placed with valve end up whenever they are in use. Liquefied gases shall be stored and shipped with the valve end up.

(v) Cylinders shall be handled carefully. Cylinders shall not be subjected to rough handling, knocks, or falls which are liable to damage the cylinder, valve or safety devices and cause leakage.

(w) Before connecting a regulator to a cylinder valve, the valve shall be opened slightly and closed immediately. The valve shall be opened while standing to one side of the outlet; never in front of it. Fuel-gas cylinder valves shall not be cracked near other welding work or near sparks, flame, or other possible sources of ignition.

(x) Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.

(y) Nothing shall be placed on top of an acetylene cylinder when in use which may damage the safety device or interfere with the quick closing of the valve.

(z) If cylinders are found to have leaky valves or fittings which cannot be stopped by closing of the valve, the cylinders shall be taken outdoors away from sources of ignition and slowly emptied.

(al) A warning should be placed near cylinders having leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition. Such cylinders should be plainly tagged; the supplier should be promptly notified and his instructions followed as to their return.

(bl) Safety devices shall not be tampered with.

(cl) Fuel-gas shall not be used from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.

(dl) The cylinder valve shall always be opened slowly.

(el) An acetylene cylinder valve shall not be opened more than one and one-half turns of the spindle, and preferably no more than three-fourths of a turn.

(fl) Where a special wrench is required it shall be left in position on the stem of the valve while the cylinder is in use so that the fuel-gas flow can be quickly turned off in case of emergency. In the case of manifolded or coupled cylinders at least one such wrench shall always be available for immediate use.

(gl) When cylinders are transported by powered vehicle they shall be secured in a vertical position.

(hl) A suitable cylinder truck, chain, or other steadying device shall be used to prevent cylinders from being knocked over while in use.

[Order 73-5, § 296-24-68203, filed 5/9/73 and Order 73-4, § 296-24-68203, filed 5/7/73.]

WAC 296-24-68205 Manifolding of cylinders. (1) Fuel-gas manifolds.

(a) Manifolds shall be approved either separately for each component part or as an assembled unit.

(b) Except as provided in (1)(c) of this section fuel-gas cylinders connected to one manifold inside a building shall be limited to a total capacity not exceeding 300 pounds of liquefied petroleum gas or 3,000 cubic feet of other fuel-gas. More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet apart or separated by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(c) Fuel-gas cylinders connected to one manifold having an aggregate capacity exceeding 300 pounds of liquefied petroleum gas or 3,000 cubic feet of other fuel-gas shall be located outdoors, or in a separate building or room constructed in accordance with WAC 296-24-68211 (6)(h) and (i).

(d) Separate manifold buildings or rooms may also be used for the storage of drums of calcium carbide and cylinders containing fuel gases as provided in WAC 296-24-68203(3). Such buildings or rooms shall have no open flames for heating or lighting and shall be well-ventilated.

(e) High-pressure fuel-gas manifolds shall be provided with approved pressure regulating devices.

(2) High-pressure oxygen manifolds (for use with cylinders having a department of transportation service pressure above 200 p.s.i.g.).

(a) Manifolds shall be approved either separately for each component or as an assembled unit.

(b) Oxygen manifolds shall not be located in an acetylene generator room. Oxygen manifolds shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of 20 feet or by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(c) Except as provided in WAC 296-24-68205 (2)(d) oxygen cylinders connected to one manifold shall be limited to a total gas capacity of 6,000 cubic feet. More than one such manifold with connected cylinders may be located in the same room provided the manifolds are at least 50 feet apart or separated by a noncombustible barrier at least 5 feet high having a fire-resistance rating of at least one-half hour.

(d) An oxygen manifold, to which cylinders having an aggregate capacity of more than 6,000 cubic feet of oxygen are connected, should be located outdoors or in a separate noncombustible building. Such a manifold, if located inside a building having other occupancy, shall be located in a separate room of noncombustible construction having a fire-resistance rating of at least one-half hour or in an area with no combustible material within 20 feet of the manifold.

(e) An oxygen manifold or oxygen bulk supply system which has storage capacity of more than 13,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), connected in service or ready for service, or more than 25,000 cubic feet of oxygen (measured at 14.7 p.s.i.a. and 70°F), including unconnected reserves on hand at the site, shall comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

(f) High-pressure oxygen manifolds shall be provided with approved pressure-regulating devices.

(3) Low-pressure oxygen manifolds (for use with cylinders having a department of transportation service pressure not exceeding 200 p.s.i.g.).

(a) Manifolds shall be of substantial construction suitable for use with oxygen at a pressure of 250 p.s.i.g. They shall have a minimum bursting pressure of 1,000 p.s.i.g. and shall be protected by a safety relief device which will relieve at a maximum pressure of 500 p.s.i.g.

Note: DOT-4L200 cylinders have safety devices which relieve at a maximum pressure of 250 p.s.i.g. (or 235 p.s.i.g. if vacuum insulation is used).

(b) Hose and hose connections subject to cylinder pressure shall comply with WAC 296-24-68209(5). Hose shall have a minimum bursting pressure of 1,000 p.s.i.g.

(c) The assembled manifold including leads shall be tested and proven gas-tight at a pressure of 300 p.s.i.g. The fluid used for testing oxygen manifolds shall be oil-free and not combustible.

(d) The location of manifolds shall comply with WAC 296-24-68205 (2)(b), (c), (d) and (e).

(e) The following sign shall be conspicuously posted at each manifold:

Low-Pressure Manifold
Do Not Connect High-Pressure Cylinders
Maximum Pressure—250 P.S.I.G.

(4) Portable outlet headers.

(a) Portable outlet headers shall not be used indoors except for temporary service where the conditions preclude a direct supply from outlets located on the service piping system.

(b) Each outlet on the service piping from which oxygen or fuel–gas is withdrawn to supply a portable outlet header shall be equipped with a readily accessible shutoff valve.

(c) Hose and hose connections used for connecting the portable outlet header to the service piping shall comply with WAC 296–24–68209(5).

(d) Master shutoff valves for both oxygen and fuel–gas shall be provided at the entry end of the portable outlet header.

(e) Portable outlet headers for fuel–gas service shall be provided with an approved hydraulic back–pressure valve installed at the inlet and preceding the service outlets, unless an approved pressure–reducing regulator, an approved backflow check valve, or an approved hydraulic back–pressure valve is installed at each outlet. Outlets provided on headers for oxygen service may be fitted for use with pressure–reducing regulators or for direct hose connection.

(f) Each service outlet on portable outlet headers shall be provided with a valve assembly that includes a detachable outlet seal cap, chained or otherwise attached to the body of the valve.

(g) Materials and fabrication procedures for portable outlet headers shall comply with WAC 296–24–68207 (1), (2) and (5).

(h) Portable outlet headers shall be provided with frames which will support the equipment securely in the correct operating position and protect them from damage during handling and operation.

(5) Manifold operating procedures.

(a) Cylinder manifolds shall be installed under the supervision of someone familiar with the proper practices with reference to their construction and use.

(b) All component parts used in the methods of manifolding described in (1)(a) through (e) of this section shall be approved as to materials, design and construction either separately or as an assembled unit.

(c) All manifolds and parts used in methods of manifolding shall be used only for the gas or gases for which they are approved.

(d) When acetylene cylinders are coupled, approved flash arresters shall be installed between each cylinder and the coupler block. For outdoor use only, and when the number of cylinders coupled does not exceed three, one flash arrester installed between the coupler block and regulator is acceptable.

(e) Each fuel–gas cylinder lead should be provided with a backflow check valve.

(f) The aggregate capacity of fuel–gas cylinders connected to a portable manifold inside a building shall not exceed 3,000 cubic feet of gas.

(g) Acetylene and liquefied fuel–gas cylinders shall be manifolded in a vertical position.

(h) The pressure in the gas cylinders connected to and discharged simultaneously through a common manifold shall be approximately equal.

[Order 73–5, § 296–24–68205, filed 5/9/73 and Order 73–4, § 296–24–68205, filed 5/7/73.]

WAC 296–24–68207 Service piping systems. (1) Materials and design. (a) Piping and fittings shall comply with Section 2, Industrial Gas and Air Piping Systems, of the American National Standard Code for Pressure Piping, ANSI B 31.1–1967, insofar as it does not conflict with WAC 296–24–68207 (1)(b) and (c).

(b) Pipe shall be at least Schedule 40 and fittings shall be at least standard weight in sizes up to and including 6–inch nominal.

(c) Copper tubing shall be Types K or L in accordance with the Standard Specification for Seamless Copper Water Tube, ASTM B88–66a.

(d) Piping shall be steel, wrought iron, brass or copper pipe, or seamless copper, brass or stainless steel tubing, except as provided in WAC 296–24–68207 (1)(e), (f), (g), (h) and (i).

(e) Oxygen piping and fittings at pressures in excess of 700 p.s.i.g., shall be stainless steel or copper alloys.

(f) Hose connections and hose complying with WAC 296–24–68209(5) may be used to connect the outlet of a manifold pressure regulator to piping providing the working pressure of the piping is 250 p.s.i.g. or less and the length of the hose does not exceed 5 feet. Hose shall have a minimum bursting pressure of 1,000 p.s.i.g.

(g) When oxygen is supplied to a service piping system from a low–pressure oxygen manifold without an intervening pressure regulating device, the piping system shall have a minimum design pressure of 250 p.s.i.g. A pressure regulating device shall be used at each station outlet when the connected equipment is for use at pressures less than 250 p.s.i.g.

(h) Piping for acetylene or acetylenic compounds shall be steel or wrought iron.

(i) Unalloyed copper shall not be used for acetylene or acetylenic compounds except in listed equipment.

(2) Piping joints.

(a) Joints in steel or wrought iron piping shall be welded, threaded or flanged. Fittings, such as ells, tees, couplings, and unions, may be rolled, forged or cast steel, maleable iron or nodular iron. Gray or white cast iron fittings are prohibited.

(b) Joints in brass or copper pipe shall be welded, brazed, threaded, or flanged. If of the socket type, they shall be brazed with silver–brazing alloy or similar high melting point (not less than 800°F) filler metal.

(c) Joints in seamless copper, brass, or stainless steel tubing shall be approved gas tubing fittings or the joints shall be brazed. If of the socket type, they shall be brazed with silver–brazing alloy or similar high melting point (not less than 800°F) filler metal.

(3) Installation.

(a) Distribution lines shall be installed and maintained in a safe operating condition.

(b) Piping located inside or outside of buildings may be placed above or below ground. All piping shall be run as directly as practicable, protected against physical damage, proper allowance being made for expansion and contraction, jarring and vibration. Pipe laid underground

in earth shall be located below the frost line and protected against corrosion. After assembly, piping shall be thoroughly blown out with air or nitrogen to remove foreign materials. For oxygen piping, only oil–free air, oil–free nitrogen, or oil–free carbon dioxide shall be used.

(c) Only piping which has been welded or brazed shall be installed in tunnels, trenches or ducts. Shutoff valves shall be located outside such conduits. Oxygen piping may be placed in the same tunnel, trench or duct with fuel–gas pipelines, provided there is good natural or forced ventilation.

(d) Low points in piping carrying moist gas shall be drained into drip pots constructed so as to permit pumping or draining out the condensate at necessary intervals. Drain valves shall be installed for this purpose having outlets normally closed with screw caps or plugs. No open end valves or petcocks shall be used, except that in drips located out of doors, underground, and not readily accessible, valves may be used at such points if they are equipped with means to secure them in the closed position. Pipes leading to the surface of the ground shall be cased or jacketed where necessary to prevent loosening or breaking.

(e) Gas cocks or valves shall be provided for all buildings at points where they will be readily accessible for shutting off the gas supply to these buildings in any emergency. Underground valve boxes or manholes should be avoided wherever possible. There shall also be provided a shutoff valve in the discharge line from the generator, gas holder, manifold or other source of supply.

(f) Shutoff valves shall not be installed in safety relief lines in such a manner that the safety relief device can be rendered ineffective.

(g) Fittings and lengths of pipe shall be examined internally before assembly and, if necessary, freed from scale or dirt. Oxygen piping and fittings shall be washed out with a suitable solution which will effectively remove grease and dirt but will not react with oxygen.

Note: Hot water solutions of caustic soda or trisodium phosphate are effective cleaning agents for this purpose.

(h) Piping shall be thoroughly blown out after assembly to remove foreign materials. For oxygen piping, oil–free air, oil–free nitrogen, or oil–free carbon dioxide shall be used. For other piping, air or inert gas may be used.

(i) When flammable gas lines or other parts of equipment are being purged of air or gas, open lights or other sources of ignition shall not be permitted near uncapped openings.

(j) No welding or cutting shall be performed on an acetylene or oxygen pipeline, including the attachment of hangers or supports, until the line has been purged. Only oil–free air, oil–free nitrogen, or oil–free carbon dioxide shall be used to purge oxygen lines.

(4) Painting and signs.

(a) Underground pipe and tubing and outdoor ferrous pipe and tubing shall be covered or painted with a suitable material for protection against corrosion.

(b) Aboveground piping systems shall be marked in accordance with the American National Standard Scheme for the Identification of Piping Systems, ANSI A 13.1–1956.

(c) Station outlets shall be marked to indicate the name of the gas.

(5) Testing.

(a) Piping systems shall be tested and proved gastight at 1 1/2 times the maximum operating pressure, and shall be thoroughly purged of air before being placed in service. The material used for testing oxygen lines shall be oil free and noncombustible. Flames shall not be used to detect leaks.

(b) When flammable gas lines or other parts of equipment are being purged of air or gas, sources of ignition shall not be permitted near uncapped openings.

[Order 73–5, § 296–24–68207, filed 5/9/73 and Order 73–4, § 296–24–68207, filed 5/7/73.]

WAC 296–24–68209 Protective equipment, hose, and regulators. (1) General. Equipment shall be installed and used only in the service for which it is approved and as recommended by the manufacturer.

(2) Pressure relief devices. Service piping systems shall be protected by pressure relief devices set to function at not more than the design pressure of the systems and discharging upwards to a safe location.

(3) Piping protective equipment.

(a) The fuel–gas and oxygen piping systems, including portable outlet headers shall incorporate the protective equipment shown in Figures Q–1, Q–2, and Q–3.

When only a portion of a fuel–gas system is to be used with oxygen, only that portion need comply with (3)(a) of this section.

(b) Approved protective equipment (designated P_F in Figs. Q–1, Q–2, and Q–3) shall be installed in fuel–gas piping to prevent:

(i) Backflow of oxygen into the fuel–gas supply system;

(ii) Passage of a flash back into the fuel–gas supply system; and

(iii) Excessive back pressure of oxygen in the fuel–gas supply system. The three functions of the protective equipment may be combined in one device or may be provided by separate devices.

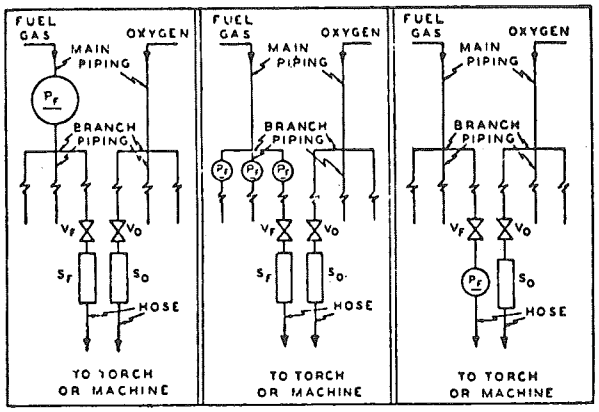


Fig. Q–1 Fig. Q–2 Fig. Q–3

LEGEND
P_F—Protective equipment in fuel gas piping
V_F—Fuel gas station outlet valve
V_O—Oxygen station outlet valve
S_F—Backflow prevention device(s) at fuel gas station outlet
S_O—Backflow prevention device(s) at oxygen station outlet

(c) The protective equipment shall be located in the main supply line, as in Figure Q–1 or at the head of each branch line, as in Figure Q–2 or at each location where fuel–gas is withdrawn, as in Figure Q–3. Where branch lines are of 2–inch pipe size or larger or of substantial length, protective equipment (designated as P_F) shall be located as shown in either Q–2 and Q–3.

(d) Backflow protection shall be provided by an approved device that will prevent oxygen from flowing into the fuel–gas system or fuel from flowing into the oxygen system (see S_F, Figs. Q–1 and Q–2).

(e) Flash–back protection shall be provided by an approved device that will prevent flame from passing into the fuel–gas system.

(f) Back–pressure protection shall be provided by an approved pressure–relief device set at a pressure not greater than the pressure rating of the backflow or the flashback protection device, whichever is lower. The pressure–relief device shall be located on the downstream side of the backflow and flashback protection devices. The vent from the pressure–relief device shall be at least as large as the relief device inlet and shall be installed without low points that may collect moisture. If low points are unavoidable, drip pots with drains closed with screw plugs or caps shall be installed at the low points. The vent terminus shall not endanger personnel or property through gas discharge; shall be located away from ignition sources; and shall terminate in a hood or bend.

(g) If pipeline protective equipment incorporates a liquid, the liquid level shall be maintained, and a suitable anti–freeze may be used to prevent freezing.

(h) Fuel gas for use with equipment not requiring oxygen shall be withdrawn upstream of the piping protective devices.

(4) Station outlet protective equipment.

(a) A check valve pressure regulator, hydraulic seal, or combination of these devices shall be provided at each station outlet, including those on portable headers, to prevent backflow, as shown in Figures Q–1, Q–2, and Q–3 and designated as S_F and S_O.

(b) When approved pipeline protective equipment (designated P_F) is located at the station outlet as in Figure Q–3, no additional check valve, pressure regulator, or hydraulic seal is required.

(c) A shutoff valve (designated V_F and V_O) shall be installed at each station outlet and shall be located on the upstream side of other station outlet equipment.

(d) If the station outlet is equipped with a detachable regulator, the outlet shall terminate in a union connection that complies with the Regulator Connection Standards, 1958, Compressed Gas Association.

(e) If the station outlet is connected directly to a hose, the outlet shall terminate in a union connection complying with the Standard Hose Connection Specifications, 1957, Compressed Gas Association.

(f) Station outlets may terminate in pipe threads to which permanent connections are to be made, such as to a machine.

(g) Station outlets shall be equipped with a detachable outlet seal cap secured in place. This cap shall be used to seal the outlet except when a hose, a regulator, or piping is attached.

(h) Where station outlets are equipped with approved backflow and flashback protective devices, as many as four torches may be supplied from one station outlet through rigid piping, provided each outlet from such piping, is equipped with a shutoff valve and provided the fuel–gas capacity of any one torch does not exceed 15 cubic feet per hour. This rule does not apply to machines.

(5) Hose and hose connections.

(a) Hose for oxy–fuel gas service shall comply with the Specification for Rubber Welding Hose, 1958, Compressed Gas Association and Rubber Manufacturers Association.

(b) The generally recognized colors are red for acetylene and other fuel–gas hose, green for oxygen hose, and black for inert–gas and air hose.

(c) When parallel lengths of oxygen and acetylene hose are taped together for convenience and to prevent tangling, not more than 4 inches out of 12 inches shall be covered by tape.

(d) Hose connections shall comply with the Standard Hose Connection Specifications, 1957, Compressed Gas Association.

(e) Hose connections shall be clamped or otherwise securely fastened in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but in no case less than a pressure of 300 p.s.i. Oil–free air or an oil–free inert gas shall be used for the test.

(f) Hose showing leaks, burns, worn places, or other defects rendering it unfit for service shall be repaired or replaced.

(6) Pressure–reducing regulators.

(a) Pressure-reducing regulators shall be used only for the gas and pressures for which they are intended. The regulator inlet connections shall comply with Regulator Connection Standards, 1958, Compressed Gas Association.

(b) When regulators or parts of regulators, including gages, need repair, the work shall be performed by skilled mechanics who have been properly instructed.

(c) Gages on oxygen regulators shall be marked "USE NO OIL."

(d) Union nuts and connections on regulators shall be inspected before use to detect faulty seats which may cause leakage of gas when the regulators are attached to the cylinder valves. Damaged nuts or connections shall be destroyed.

[Order 73-5, § 296-24-68209, filed 5/9/73 and Order 73-4, § 296-24-68209, filed 5/7/73.]

WAC 296-24-68211 Acetylene generators. (1) Approval and marking.

(a) Generators shall be of approved construction and shall be plainly marked with the maximum rate of acetylene in cubic feet per hour for which they are designed; the weight and size of carbide necessary for a single charge; the manufacturer's name and address; and the name or number of the type of generator.

(b) Carbide shall be of the size marked on the generator nameplate.

(2) Rating and pressure limitations.

(a) The total hourly output of a generator shall not exceed the rate for which it is approved and marked. Unless specifically approved for higher ratings, carbide-feed generators shall be rated at 1 cubic foot per hour per pound of carbide required for a single complete charge.

(b) Relief valves shall be regularly operated to insure proper functioning. Relief valves for generating chambers shall be set to open at a pressure not in excess of 15 p.s.i.g. Relief valves for hydraulic back pressure valves shall be set to open at a pressure not in excess of 20 p.s.i.g.

(c) Nonautomatic generators shall not be used for generating acetylene at pressures exceeding 1 p.s.i.g., and all water overflows shall be visible.

(3) Location. The space around the generator shall be ample for free, unobstructed operation and maintenance and shall permit ready adjustment and charging.

(4) Stationary acetylene generators (automatic and nonautomatic).

(a) The foundation shall be so arranged that the generator will be level and so that no excessive strain will be placed on the generator or its connections. Acetylene generators shall be grounded.

(b) Generators shall be placed where water will not freeze. The use of common salt (sodium chloride) or other corrosive chemicals for protection against freezing is not permitted. (For heating systems see WAC 296-24-68211 (6)(k).)

(c) Except when generators are prepared in accordance with WAC 296-24-68211 (7)(i), sources of ignition shall be prohibited in outside generator houses or inside generator rooms.

(d) Water shall not be supplied through a continuous connection to the generator except when the generator is provided with an adequate open overflow or automatic water shutoff which will effectively prevent overfilling of the generator. Where a noncontinuous connection is used, the supply line shall terminate at a point not less than 2 inches above the regularly provided opening for filling so that the water can be observed as it enters the generator.

(e) Unless otherwise specifically approved, generators shall not be fitted with continuous drain connections leading to sewers, but shall discharge through an open connection into a suitably vented outdoor receptacle or residue pit which may have such connections. An open connection for the sludge drawoff is desirable to enable the generator operator to observe leakage of generating water from the drain valve or sludge cock.

(f) Each generator shall be provided with a vent pipe of Schedule 40 galvanized iron or steel, except that outside of buildings, vent pipes larger than 4 inches in diameter may be not less than 14 gage galvanized tubing or sheet steel.

(g) The escape or relief pipe shall be rigidly installed without traps and so that any condensation will drain back to the generator.

(h) The escape or relief pipe shall be carried full size to a suitable point outside the building. It shall terminate in a hood or bend located at least 12 feet above the ground, preferably above the roof, and as far away as practicable from windows or other openings into buildings and as far away as practicable from sources of ignition such as flues or chimneys and tracks used by locomotives. Generating chamber relief pipes shall not be inter-connected but shall be separately led to the outside air. The hood or bend shall be so constructed that it will not be obstructed by rain, snow, ice, insects, or birds. The outlet shall be at least 3 feet from combustible construction.

(i) Gas holders shall be constructed on the gasometer principle, the bell being suitably guided. The gas bell shall move freely without tendency to bind and shall have a clearance of at least 2 inches from the shell.

(j) The gas holder may be located in the generator room, in a separate room or out of doors. In order to prevent collapse of the gas bell or infiltration of air due to a vacuum caused by the compressor or booster pump or cooling of the gas, a compressor or booster cutoff shall be provided at a point 12 inches or more above the landing point of the bell. When the gas holder is located indoors, the room shall be ventilated in accordance with WAC 296-24-68211 (6)(j) and heated and lighted in accordance with WAC 296-24-68211 (6)(k) and (1).

(k) When the gas holder is not located within a heated building, gas holder seals shall be protected against freezing.

(l) Means shall be provided to stop the generator–feeding mechanism before the gas holder reaches the upper limit of its travel.

(m) When the gas holder is connected to only one generator, the gas capacity of the holder shall be not less than one–third of the hourly rating of the generator.

(n) If acetylene is used from the gas holder without increase in pressure at some points but with increase in pressure by a compressor or booster pump at other points, approved piping protective devices shall be installed in each supply line. The low–pressure protective device shall be located between the gas holder and the shop piping, and the medium–pressure protective device shall be located between the compressor or booster pump and the shop piping (see Figure Q–4). Approved protective equipment (designated P_F) is used to prevent: Backflow of oxygen into the fuel–gas supply system; passage of a flashback into the fuel–gas supply system; and excessive back pressure of oxygen in the fuel–gas supply system. The three functions of the protective equipment may be combined in one device or may be provided by separate devices.

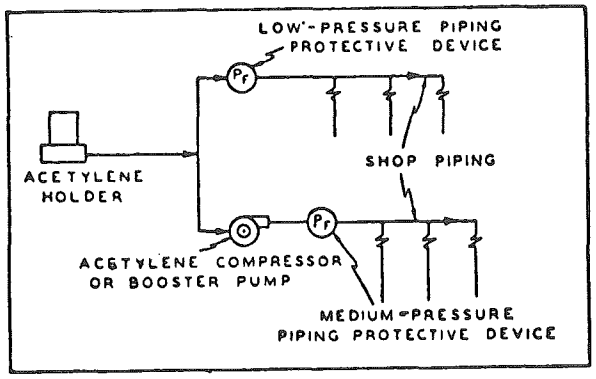


Figure Q–4

(o) The compressor or booster system shall be of an approved type.

(p) Wiring and electrical equipment in compressor or booster pump rooms or enclosures shall conform to the provisions of the National Electrical Code, Part 5, NFPA–1971, Article 501, (ANSI–C 1–1971) for Class I, Division 2 locations.

(q) Compressors and booster pump equipment shall be located in well–ventilated areas away from open flames, electrical or mechanical sparks, or other ignition sources.

(r) Compressor or booster pumps shall be provided with pressure relief valves which will relieve pressure exceeding 15 p.s.i.g. to a safe outdoor location as provided in WAC 296–24–68211 (2)(b), or by returning the gas to the inlet side or to the gas supply source.

(s) Compressor or booster pump discharge outlets shall be provided with approved protective equipment. (See WAC 296–24–68211 (4)(e).)

(5) Portable acetylene generators.

(a) All portable generators shall be of a type approved for portable use.

(b) Portable generators shall not be used within 10 feet of combustible material other than the floor.

(c) Portable generators shall not be used in rooms of total volume less than 35 times the total gas–generating capacity per charge of all generators in the room. Generators shall not be used in rooms having a ceiling height of less than 10 feet. (To obtain the gas–generating capacity in cubic feet per charge, multiply the pounds of carbide per charge by 4.5.)

(d) Portable generators shall be protected against freezing. The use of salt or other corrosive chemical to prevent freezing is prohibited.

(e) Portable generators shall be cleaned and recharged and the air mixture blown off outside buildings.

(f) When charged with carbide, portable generators shall not be moved by crane or derrick.

(g) When not in use, portable generators shall not be stored in rooms in which open flames are used unless the generators contain no carbide and have been thoroughly purged of acetylene. Storage rooms shall be well ventilated.

(h) When portable acetylene generators are to be transported and operated on vehicles, they shall be securely anchored to the vehicles. If transported by truck, the motor shall be turned off during charging, cleaning, and generating periods.

(i) Portable generators shall be located at a safe distance from the welding position so that they will not be exposed to sparks, slag, or misdirection of the torch flame or overheating from hot materials or processes.

(6) Outside generator houses and inside generator rooms for stationary acetylene generators.

(a) No opening in any outside generator house shall be located within 5 feet of any opening in another building.

(b) Walls, floors and roofs of outside generator houses shall be of noncombustible construction.

(c) When a part of the generator house is to be used for the storage or manifolding of oxygen cylinders, the space to be so occupied shall be separated from the generator carbide storage section by partition walls continuous from floor to roof or ceiling, of the type of construction stated in WAC 296–24–68211 (6)(h). Such separation walls shall be without openings and shall be joined to the floor, other walls and ceiling or roof in a manner to effect a permanent gas–tight joint.

(d) Exit doors shall be located so as to be readily accessible in case of emergency.

(e) Explosion venting for outside generator houses and inside generator rooms shall be provided in exterior walls or roofs. The venting areas shall be equal to not less than 1 square foot per 50 cubic feet of room volume and may consist of any one or any combination of the following: Walls of light, noncombustible material preferably single–thickness, single–strength glass; lightly fastened hatch covers; lightly fastened swinging doors in exterior walls opening outward; lightly fastened walls or roof designed to relieve at a maximum pressure of 25 pounds per square foot.

(f) The installation of acetylene generators within buildings shall be restricted to buildings not exceeding

one story in height: *Provided, however,* That this will not be construed as prohibiting such installations on the roof or top floor of a building exceeding such height.

(g) Generators installed inside buildings shall be enclosed in a separate room of ample size.

(h) The walls, partitions, floors, and ceilings of inside generator rooms shall be of noncombustible construction having a fire–resistance rating of at least 1 hour. The walls or partitions shall be continuous from floor to ceiling and shall be securely anchored. At least one wall of the room shall be an exterior wall.

(i) Openings from an inside generator room to other parts of the building shall be protected by a swinging type, self–closing fire door for a Class B opening and having a rating of at least 1 hour. Windows in partitions shall be wired glass and approved metal frames with fixed sash. Installation shall be in accordance with the Standard for the Installation of Fire Doors and Windows, NFPA 80–1970.

(j) Inside generator rooms or outside generator houses shall be well ventilated with vents located at floor and ceiling levels.

(k) Heating shall be by steam, hot water, enclosed electrically heated elements or other indirect means. Heating by flames or fires shall be prohibited in outside generator houses or inside generator rooms, or in any enclosure communicating with them.

(l) Generator houses or rooms shall have natural light during daylight hours. Where artificial lighting is necessary it shall be restricted to electric lamps installed in a fixed position. Unless specifically approved for use in atmospheres containing acetylene, such lamps shall be provided with enclosures of glass or other noncombustible material so designed and constructed as to prevent gas vapors from reaching the lamp or socket and to resist breakage. Rigid conduit with threaded connections shall be used.

(m) Lamps installed outside of wired–glass panels set in gas–tight frames in the exterior walls or roof of the generator house or room are acceptable.

(n) Electric switches, telephones, and all other electrical apparatus which may cause a spark, unless specifically approved for use inside acetylene generator rooms, shall be located outside the generator house or in a room or space separated from the generator room by a gas–tight partition, except that where the generator system is designed so that no carbide fill opening or other part of the generator is open to the generator house or room during the operation of the generator, and so that residue is carried in closed piping from the residue discharge valve to a point outside the generator house or room, electrical equipment in the generator house or room shall conform to the provisions of the National Electrical Code, Part 5, NFPA–1971, Article 501, (ANSI–C 1–1971) for Class I, Division 2 locations.

(7) Maintenance and operation.

(a) Unauthorized persons shall not be permitted in outside generator houses or inside generator rooms.

(b) Operating instructions shall be posted in a conspicuous place near the generator or kept in a suitable place available for ready reference.

(c) When recharging generators the order of operations specified in the instructions supplied by the manufacturer shall be followed.

(d) In the case of batch–type generators, when the charge of carbide is exhausted and before additional carbide is added, the generating chamber shall always be flushed out with water, renewing the water supply in accordance with the instruction card furnished by the manufacturer.

(e) The water–carbide residue mixture drained from the generator shall not be discharged into sewer pipes or stored in areas near open flames. Clear water from residue settling pits may be discharged into sewer pipes.

(f) The carbide added each time the generator is recharged shall be sufficient to refill the space provided for carbide without ramming the charge. Steel or other ferrous tools shall not be used in distributing the charge.

(g) Generator water chambers shall be kept filled to proper level at all times except while draining during the recharging operation.

(h) Whenever repairs are to be made or the generator is to be charged or carbide is to be removed, the water chamber shall be filled to the proper level.

(i) Previous to making repairs involving welding, soldering, or other hot work or other operations which produce a source of ignition, the carbide charge and feed mechanism shall be completely removed. All acetylene shall be expelled by completely flooding the generator shell with water and the generator shall be disconnected from the piping system. The generator shall be kept filled with water, if possible, or positioned to hold as much water as possible.

(j) Hot repairs shall not be made in a room where there are other generators unless all the generators and piping have been purged of acetylene. Hot repairs should preferably be made out of doors.

[Order 73–5, § 296–24–68211, filed 5/9/73 and Order 73–4, § 296–24–68211, filed 5/7/73.]

WAC 296–24–68213 Calcium carbide storage. (1) Packaging.

(a) Calcium carbide shall be contained in metal packages of sufficient strength to prevent rupture. The packages shall be provided with a screw top or equivalent. These packages shall be constructed water– and air–tight. Solder shall not be used in such a manner that the package will fail if exposed to fire.

(b) Packages containing calcium carbide shall be conspicuously marked "calcium carbide–dangerous if not kept dry" or with equivalent warning.

(c) Caution: Metal tools, even the so–called spark resistant type may cause ignition of an acetylene and air mixture when opening carbide containers.

(d) Sprinkler systems shall not be installed in carbide storage rooms.

(2) Storage indoors.

(a) Calcium carbide in quantities not to exceed 600 pounds may be stored indoors in dry, waterproof, and well–ventilated locations.

(b) Calcium carbide not exceeding 600 pounds may be stored indoors in the same room with fuel-gas cylinders.

(c) Packages of calcium carbide, except for one of each size, shall be kept sealed. The seals shall not be broken when there is carbide in excess of 1 pound in any other unsealed package of the same size of carbide in the room.

(d) Calcium carbide exceeding 600 pounds but not exceeding 5,000 pounds shall be stored:

(i) In accordance with (2)(e) of this section.

(ii) In an inside generator room or outside generator house; or

(iii) In a separate room in a one-story building which may contain other occupancies, but without cellar or basement beneath the carbide storage section. Such rooms shall be constructed in accordance with WAC 296-24-68211 (6)(h) and (i) and ventilated in accordance with WAC 296-24-68211 (6)(j). These rooms shall be used for no other purpose.

(e) Calcium carbide in excess of 5,000 pounds shall be stored in one-story buildings without cellar or basement and used for no other purpose, or in outside generator houses. The location of such storage buildings shall be away from congested mercantile and manufacturing districts. If the storage building is of noncombustible construction, it may adjoin other one-story buildings if separated therefrom by unpierced firewalls; if it is detached less than 10 feet from such building or buildings, there shall be no opening in any of the mutually exposing sides of such buildings within 10 feet. If the storage building is of combustible construction, it shall be at least 20 feet from any other one- or two-story building, and at least 30 feet from any other building exceeding two stories.

(3) Storage outdoors.

(a) Calcium carbide in unopened metal containers may be stored outdoors.

(b) Carbide containers to be stored outdoors shall be examined to make sure that they are airtight and watertight. Periodic reexaminations shall be made for rusting or other damage to a container that might affect its water or air tightness.

(c) The bottom tier of each row shall be placed on wooden planking or equivalent so that the containers will not come in contact with the ground or ground water.

(d) Storage areas shall be at least 10 feet from lines of adjoining property that may be built upon.

(e) Containers of carbide which have been in storage the longest shall be used first.

[Order 73-5, § 296-24-68213, filed 5/9/73 and Order 73-4, § 296-24-68213, filed 5/7/73.]

WAC 296-24-68215 Public exhibitions and demonstrations. (1) Installation requirements. Installation and operation of welding, cutting, and related equipment shall be done by, or under the supervision of, a competent operator to insure the personal protection of viewers and demonstrators as well as the protection from fire, of materials in and around the site and the building itself.

(2) Procedures.

(a) Cylinders containing compressed gases for use at the site shall not be charged in excess of one-half their maximum permissible content. (Cylinders of nonliquefied gases and acetylene shall be charged to not more than one-half their maximum permissible charged pressure in p.s.i.g. Cylinders of liquefied gases shall be charged to not more than one-half the maximum permissible capacity in pounds.)

(b) Cylinders located at the site shall be connected for use except that enough additional cylinders may be stored at the site to furnish approximately 1 day's consumption of each gas used. Other cylinders shall be stored, in an approved storage area, preferably outdoors, but this storage area shall not be located near a building exit.

(c) Cylinders in excess of 40 pounds total weight being transported to or from the site shall be carried on a hand or motorized truck.

(d) The site shall be constructed, equipped, and operated in such a manner that the demonstration will be carried out so as to minimize the possibility of injury to viewers.

(e) Sites involving the use of compressed gases shall be located so as not to interfere with the egress of people during an emergency.

(f) The fire department shall be notified in advance of such use of the site.

(g) Each site shall be provided with a portable fire extinguisher of appropriate size and type and with a pail of water.

(h) The public and combustible materials at the site shall be protected from flames, sparks, and molten metal.

(i) Hoses shall be located and protected so that they will not be physically damaged.

(j) Cylinder valves shall be closed when equipment is unattended.

(k) Where caps are provided for valve protection, such caps shall be in place except when the cylinders are in service or connected ready for service.

(l) Cylinders shall be located or secured so that they cannot be knocked over.

[Order 73-5, § 296-24-68215, filed 5/9/73 and Order 73-4, § 296-24-68215, filed 5/7/73.]

WAC 296-24-685 Application, installation, and operation of arc welding and cutting equipment.

[Order 73-5, § 296-24-685, filed 5/9/73 and Order 73-4, § 296-24-685, filed 5/7/73.]

WAC 296-24-68501 General. (1) Equipment selection. Welding equipment shall be chosen for safe application to the work to be done as specified in WAC 296-24-68503.

(2) Installation. Welding equipment shall be installed safely as specified by WAC 296-24-68505.

(3) Instruction. Workmen designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment as specified in WAC 296-24-68507.

[Order 73-5, § 296-24-68501, filed 5/9/73 and Order 73-4, § 296-24-68501, filed 5/7/73.]

WAC 296-24-68503 Application of arc welding equipment.

Note: Assurance of consideration of safety in design is obtainable by choosing apparatus complying with the Requirements for Electric Arc-Welding Apparatus, NEMA EW-1-1962, National Electrical Manufacturers Association or the Safety Standard for Transformer-Type Arc-Welding Machines, ANSI C33.2-1956, Underwriters' Laboratories.

(1) Environmental conditions.

(a) Standard machines for arc welding service shall be designed and constructed to carry their rated load with rated temperature rises where the temperature of the cooling air does not exceed 40°C (104°F) and where the altitude does not exceed 3,300 feet, and shall be suitable for operation in atmospheres containing gases, dust, and light rays produced by the welding arc.

(b) Unusual service conditions may exist, and in such circumstances machines shall be especially designed to safely meet the requirements of the service. Chief among these conditions are exposure to:

(i) Unusually corrosive fumes.

(ii) Steam or excessive humidity.

(iii) Excessive oil vapor.

(iv) Flammable gases.

(v) Abnormal vibration or shock.

(vi) Excessive dust.

(vii) Weather.

(viii) Unusual seacoast or shipboard conditions.

(2) Voltage. Open circuit (no load) voltages of arc welding and cutting machines should be as low as possible consistent with satisfactory welding or cutting being done. The following limits shall not be exceeded:

(a) Alternating-current machines.

(i) Manual arc welding and cutting—80 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting—100 volts.

(b) Direct-current machines.

(i) Manual arc welding and cutting—100 volts.

(ii) Automatic (machine or mechanized) arc welding and cutting—100 volts.

(c) When special welding and cutting processes require values of open circuit voltages higher than the above, means shall be provided to prevent the operator from making accidental contact with the high voltage by adequate insulation or other means.

Note: For a.c. welding under wet conditions or warm surroundings where perspiration is a factor, the use of reliable automatic controls for reducing no load voltage is recommended to reduce the shock hazard.

(3) Design.

(a) A controller integrally mounted in an electric motor driven welder shall have capacity for carrying rated motor current, shall be capable of making and interrupting stalled rotor current of the motor, and may serve as the running overcurrent device if provided with the number of over-current units as specified by the National Electrical Code, Part 5 of NFPA-1971 (ANSI-C 1-1971). Starters with magnetic undervoltage release should be used with machines installed more than one to a circuit to prevent circuit overload caused by simultaneously starting of several motors upon return of voltage.

(b) On all types of arc welding machines, control apparatus shall be enclosed except for the operating wheels, levers, or handles.

Note: Control handles and wheels should be large enough to be easily grasped by a gloved hand.

(c) Input power terminals, tap change devices and live metal parts connected to input circuits shall be completely enclosed and accessible only by means of tools.

(d) Terminals for welding leads should be protected from accidental electrical contact by employees or by metal objects i.e., vehicles, crane hooks, etc. Protection may be obtained by use of: Dead-front receptacles for plug connections; recessed openings with nonremovable hinged covers; heavy insulating sleeving or taping or other equivalent electrical and mechanical protection. If a welding lead terminal which is intended to be used exclusively for connection to the work is connected to the grounded enclosure, it must be done by a conductor at least two AWG sizes smaller than the grounding conductor and the terminal shall be marked to indicate that it is grounded.

(e) No connections for portable control devices such as push buttons to be carried by the operator shall be connected to an a.c. circuit of higher than 120 volts. Exposed metal parts of portable control devices operating on circuits above 50 volts shall be grounded by a grounding conductor in the control cable.

(f) Auto transformers or a.c. reactors shall not be used to draw welding current directly from any a.c. power source having a voltage exceeding 80 volts.

[Order 73-5, § 296-24-68503, filed 5/9/73 and Order 73-4, § 296-24-68503, filed 5/7/73.]

WAC 296-24-68505 Installation of arc welding equipment. (1) General. Installation including power supply shall be in accordance with the requirements of the National Electrical Code, Part 5 of NFPA-1971 (ANSI-C 1-1971).

(2) Grounding.

(a) The frame or case of the welding machine (except engine-driven machines) shall be grounded under the conditions and according to the methods prescribed in National Electrical Code, Part 5 of NFPA-1971 (ANSI-C 1-1971).

(b) Conduits containing electrical conductors shall not be used for completing a work-lead circuit. Pipelines shall not be used as a permanent part of a work-lead circuit, but may be used during construction, extension or repair providing current is not carried through threaded joints, flanged bolted joints, or caulked joints and that special precautions are used to avoid sparking at connection of the work-lead cable.

(c) Chains, wire ropes, cranes, hoists, and elevators shall not be used to carry welding current.

(d) Where a structure, conveyor, or fixture is regularly employed as a welding current return circuit, joints shall be bonded or provided with adequate current collecting devices and appropriate periodic inspection

should be conducted to ascertain that no condition of electrolysis or shock, or fire hazard exists by virtue of such use.

(e) All ground connections shall be checked to determine that they are mechanically strong and electrically adequate for the required current.

(3) Supply connections and conductors.

(a) A disconnecting switch or controller shall be provided at or near each welding machine which is not equipped with such a switch or controller mounted as an integral part of the machine. The switch shall be in accordance with the National Electrical Code, Part 5 of NFPA–1971 (ANSI–C 1–1971). Overcurrent protection shall be provided as specified in the National Electrical Code, Part 5 of NFPA–1971 (ANSI–C 1–1971). A disconnect switch with overload protection or equivalent disconnect and protection means, permitted by the National Electrical Code, Part 5 of NFPA–1971 (ANSI–C 1–1971) shall be provided for each outlet intended for connection to a portable welding machine.

(b) For individual welding machines, the rated current–carrying capacity of the supply conductors shall be not less than the rated primary current of the welding machines.

(c) For groups of welding machines, the rated current–carrying capacity of conductors may be less than the sum of the rated primary currents of the welding machines supplied. The conductor rating shall be determined in each case according to the machine loading based on the use to be made of each welding machine and the allowance permissible in the event that all the welding machines supplied by the conductors will not be in use at the same time.

(d) In operations involving several welders on one structure, d.c. welding process requirements may require the use of both polarities; or supply circuit limitations for a.c. welding may require distribution of machines among the phases of the supply circuit. In such cases no load voltages between electrode holders will be 2 times normal in d.c. or 1, 1.4, 1.73, or 2 times normal on a.c. machines. Similar voltage differences will exist if both a.c. and d.c. welding are done on the same structure.

(i) All d.c. machines shall be connected with the same polarity.

(ii) All a.c. machines shall be connected to the same phase of the supply circuit and with the same instantaneous polarity.

[Order 73–5, § 296–24–68505, filed 5/9/73 and Order 73–4, § 296–24–68505, filed 5/7/73.]

WAC 296–24–68507 Operation and maintenance. (1) General. Workmen assigned to operate or maintain arc welding equipment shall be acquainted with the requirements of WAC 296–24–68501 through 296–24–68505, 296–24–69501 through 296–24–69507, 296–24–70001 through 296–24–70007 and 296–24–71501 through 296–24–71525; if doing gas–shielded arc welding, also Recommended Safe Practices for Gas–Shielded Arc Welding, A6.1–1966, American Welding Society.

(2) Machine hook up. Before starting operations all connections to the machine shall be checked to make certain they are properly made. The work lead shall be firmly attached to the work; magnetic work clamps shall be freed from adherent metal particles of spatter on contact surfaces. Coiled welding cable shall be spread out before use to avoid serious overheating and damage to insulation.

(3) Grounding. Grounding of the welding machine frame shall be checked. Special attention shall be given to safety ground connections of portable machines.

(4) Leaks. There shall be no leaks of cooling water, shielding gas or engine fuel.

(5) Switches. It shall be determined that proper switching equipment for shutting down the machine is provided.

(6) Manufacturers' instructions. Printed rules and instructions covering operation of equipment supplied by the manufacturers shall be strictly followed.

(7) Electrode holders. Electrode holders when not in use shall be so placed that they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks.

(8) Electric shock. Cables with splices within 10 feet of the holder shall not be used. The welder should not coil or loop welding electrode cable around parts of his body.

(9) Maintenance.

(a) The operator should report any equipment defect or safety hazard to his supervisor and the use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by qualified personnel.

(b) Machines which have become wet shall be thoroughly dried and tested before being used.

(c) Work and electrode lead cables should be frequently inspected for wear and damage. Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions.

[Order 73–5, § 296–24–68507, filed 5/9/73 and Order 73–4, § 296–24–68507, filed 5/7/73.]

WAC 296–24–690 Installation and operation of resistance welding equipment.

[Order 73–5, § 296–24–690, filed 5/9/73 and Order 73–4, § 296–24–690, filed 5/7/73.]

WAC 296–24–69001 General. (1) Installation. All equipment shall be installed by a qualified electrician in conformance with the National Electrical Code, Part 5 of NFPA–1971 (ANSI–C 1–1971). There shall be a safety–type disconnecting switch or a circuit breaker or circuit interrupter to open each power circuit to the machine, conveniently located at or near the machine, so that the power can be shut off when the machine or its controls are to be serviced.

(2) Thermal protection. Ignitron tubes used in resistance welding equipment shall be equipped with a thermal protection switch.

(3) Personnel. Workmen designated to operate resistance welding equipment shall have been properly instructed and judged competent to operate such equipment.

(4) Guarding. Controls of all automatic or air and hydraulic clamps shall be arranged or guarded to prevent the operator from accidentally activating them.

[Order 73-5, § 296-24-69001, filed 5/9/73 and Order 73-4, § 296-24-69001, filed 5/7/73.]

WAC 296-24-69003 Spot and seam welding machines (nonportable). (1) Voltage. All external weld initiating control circuits shall operate on low voltage, not over 120 volts.

(2) Capacitor welding. Stored energy or capacitor discharge type of resistance welding equipment and control panels involving high voltage (over 550 volts) shall be suitably insulated and protected by complete enclosures, all doors of which shall be provided with suitable interlocks and contacts wired into the control circuit (similar to elevator interlocks). Such interlocks or contacts shall be so designed as to effectively interrupt power and short circuit all capacitors when the door or panel is open. A manually operated switch or suitable positive device shall be installed, in addition to the mechanical interlocks or contacts, as an added safety measure assuring absolute discharge of all capacitors.

(3) Interlocks. All doors and access panels of all resistance welding machines and control panels shall be kept locked and interlocked to prevent access, by unauthorized persons, to live portions of the equipment.

(4) Guarding. All press welding machine operations, where there is a possibility of the operator's fingers being under the point of operation, shall be effectively guarded by the use of a device such as an electronic eye safety circuit, two hand controls or protections similar to that prescribed for punch press operation, WAC 296-24-19501 through 296-24-19513. All chains, gears, operating bus linkage, and belts shall be protected by adequate guards, in accordance with WAC 296-24-20501 through 296-24-20533.

(5) Shields. The hazard of flying sparks shall be, wherever practical, eliminated by installing a shield guard of safety glass or suitable fire-resistant plastic at the point of operation. Additional shields or curtains shall be installed as necessary to protect passing persons from flying sparks. (See WAC 296-24-70003 (1)(c).)

(6) Foot switches. All foot switches shall be guarded to prevent accidental operation of the machine.

(7) Stop buttons. Two or more safety emergency stop buttons shall be provided on all special multispot welding machines, including 2-post and 4-post weld presses.

(8) Safety pins. On large machines, four safety pins with plugs and receptacles (one in each corner) shall be provided so that when safety pins are removed and inserted in the ram or platen, the press becomes inoperative.

(9) Grounding. Where technically practical, the secondary of all welding transformers used in multispot, protection and seam welding machines shall be grounded. This may be done by permanently grounding one side of the welding secondary current circuit. Where not technically practical, a center tapped grounding reactor connected across the secondary or the use of a safety disconnect switch in conjunction with the welding control are acceptable alternates. Safety disconnect shall be arranged to open both sides of the line when welding current is not present.

[Order 73-5, § 296-24-69003, filed 5/9/73 and Order 73-4, § 296-24-69003, filed 5/7/73.]

WAC 296-24-69005 Portable welding machines. (1) Counter-balance. All portable welding guns shall have suitable counter-balanced devices for supporting the guns, including cables, unless the design of the gun or fixture makes counterbalancing impractical or unnecessary.

(2) Safety chains. All portable welding guns, transformers and related equipment that is suspended from overhead structures, eye beams, trolleys, etc., shall be equipped with safety chains or cables. Safety chains or cables shall be capable of supporting the total shock load in the event of failure of any component of the supporting system.

(3) Clevis. When trolleys are used to support portable welding equipment, they shall be equipped with suitable forged steel clevis for the attachment of safety chains. Each clevis shall be capable of supporting the total shock load of the suspended equipment in the event of trolley failure.

(4) Switch guards. All initiating switches, including retraction and dual schedule switches, located on the portable welding gun shall be equipped with suitable guards capable of preventing accidental initiation through contact with fixturing, operator's clothing, etc. Initiating switch voltage shall not exceed 24 volts.

(5) Moving holder. The movable holder, where it enters the gun frame, shall have sufficient clearance to prevent the shearing of fingers carelessly placed on the operating movable holder.

(6) Grounding. The secondary and case of all portable welding transformers shall be grounded. Secondary grounding may be by center tapped secondary or by a center tapped grounding reactor connected across the secondary.

[Order 73-5, § 296-24-69005, filed 5/9/73 and Order 73-4, § 296-24-69005, filed 5/7/73.]

WAC 296-24-69007 Flash welding equipment. (1) Ventilation and flash guard. Flash welding machines shall be equipped with a hood to control flying flash. In cases of high production, where materials may contain a film of oil and where toxic elements and metal fumes are given off, ventilation shall be provided in accordance with WAC 296-24-71501 through 296-24-71525.

(2) Fire curtains. For the protection of the operators of nearby equipment, fire-resistant curtains or suitable shields shall be set up around the machine and in such a manner that the operators movements are not hampered.

(3) If the welding process cannot be isolated, all persons who may be exposed to the hazard of arc flash shall be properly protected.

[Order 74-27, § 296-24-69007, filed 5/7/74; Order 73-5, § 296-24-69007, filed 5/9/73 and Order 73-4, § 296-24-69007, filed 5/7/73.]

WAC 296-24-69009 Hazards and precautions. A job hazard analysis shall be made, by qualified personnel, of the operations to be performed on each welding machine to determine the safeguards and personal protective equipment that shall be used for each job.

[Order 73-5, § 296-24-69009, filed 5/9/73 and Order 73-4, § 296-24-69009, filed 5/7/73.]

WAC 296-24-69011 Maintenance. Periodic inspection shall be made by qualified maintenance personnel, and records of the same maintained. The operator shall be instructed to report any equipment defects to his supervisor and the use of the equipment shall be discontinued until safety repairs have been completed.

[Order 73-5, § 296-24-69011, filed 5/9/73 and Order 73-4, § 296-24-69011, filed 5/7/73.]

WAC 296-24-695 Fire prevention and protection.

[Order 73-5, § 296-24-695, filed 5/9/73 and Order 73-4, § 296-24-695, filed 5/7/73.]

WAC 296-24-69501 Basic precautions. For elaboration of these basic precautions and of the special precautions of WAC 296-24-69503 as well as a delineation of the fire protection and prevention responsibilities of welders and cutters, their supervisors (including outside contractors) and those in management on whose property cutting and welding is to be performed, see, Standard for Fire Prevention in Use of Cutting and Welding Processes, NFPA Standard 51B, 1962. The basic precautions for fire prevention in welding or cutting work are:

(1) Fire hazards. If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.

(2) Guards. If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

(3) Restrictions. If the requirements stated in WAC 296-24-69501 (1) and (2) cannot be followed then welding and cutting shall not be performed.

[Order 73-5, § 296-24-69501, filed 5/9/73 and Order 73-4, § 296-24-69501, filed 5/7/73.]

WAC 296-24-69503 Special precautions. When the nature of the work to be performed falls within the scope of WAC 296-24-69501(2) certain additional precautions may be necessary:

(1) Combustible material. Wherever there are floor openings or cracks in the flooring that cannot be closed, precautions shall be taken so that no readily combustible materials on the floor below will be exposed to sparks which might drop through the floor. The same precautions shall be observed with regard to cracks or holes in walls, open doorways and open or broken windows.

(2) Fire extinguishers. Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or portable extinguishers depending upon the nature and quantity of the combustible material exposed.

(3) Fire watch.

(a) Fire watchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

(i) Appreciable combustible material, in building construction or contents, closer than 35 feet to the point of operation.

(ii) Appreciable combustibles are more than 35 feet away but are easily ignited by sparks.

(iii) Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas including concealed spaces in walls or floors.

(iv) Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

(b) Fire watchers shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm. A fire watch shall be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

(4) Authorization. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. He shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.

(5) Floors. Where combustible materials such as paper clippings, wood shavings, or textile fibers are on the floor, the floor shall be swept clean for a radius of 35 feet. Combustible floors shall be kept wet, covered with damp sand, or protected by fire-resistant shields. Where floors have been wet down, personnel operating arc welding or cutting equipment shall be protected from possible shock.

(6) Prohibited areas. Cutting or welding shall not be permitted in the following situations:

(a) In areas not authorized by management.

(b) In sprinklered buildings while such protection is impaired.

(c) In the presence of explosive atmospheres (mixtures of flammable gases, vapors, liquids, or dusts with air), or explosive atmospheres that may develop inside uncleaned or improperly prepared tanks or equipment which have previously contained such materials, or that may develop in areas with an accumulation of combustible dusts.

(d) In areas near the storage of large quantities of exposed, readily ignitable materials such as bulk sulphur, baled paper, or cotton.

(7) Relocation of combustibles. Where practicable, all combustibles shall be relocated at least 35 feet from the

work site. Where relocation is impracticable, combustibles shall be protected with flameproofed covers or otherwise shielded with metal or asbestos guards or curtains. Edges of covers at the floor should be tight to prevent sparks from going under them. This precaution is also important at overlaps where several covers are used to protect a large pile.

(8) Ducts. Ducts and conveyor systems that might carry sparks to distant combustibles shall be suitably protected or shut down.

(9) Combustible walls. Where cutting or welding is done near walls, partitions, ceiling or roof of combustible construction, fire-resistant shields or guards shall be provided to prevent ignition.

(10) Noncombustible walls. If welding is to be done on a metal wall, partition, ceiling or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction or radiation, preferably by relocating combustibles. Where combustibles are not relocated, a fire watch on the opposite side from the work shall be provided.

(11) Combustible cover. Welding shall not be attempted on a metal partition, wall, ceiling or roof having a combustible covering nor on walls or partitions of combustible sandwich-type panel construction.

(12) Pipes. Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings or roofs shall not be undertaken if the work is close enough to cause ignition by conduction.

(13) Management. Management shall recognize its responsibility for the safe usage of cutting and welding equipment on its property and:

(a) Based on fire potentials of plant facilities, establish areas for cutting and welding, and establish procedures for cutting and welding, in other areas.

(b) Designate an individual responsible for authorizing cutting and welding operations in areas not specifically designed for such processes.

(c) Insist that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.

(d) Advise all contractors about flammable materials or hazardous conditions of which they may not be aware.

(14) Supervisor. The supervisor:

(a) Shall be responsible for the safe handling of the cutting or welding equipment and the safe use of the cutting or welding process.

(b) Shall determine the combustible materials and hazardous areas present or likely to be present in the work location.

(c) Shall protect combustibles from ignition by the following:

(i) Have the work moved to a location free from dangerous combustibles.

(ii) If the work cannot be moved, have the combustibles moved to a safe distance from the work or have the combustibles properly shielded against ignition.

(iii) See that cutting and welding are so scheduled that plant operations that might expose combustibles to ignition are not started during cutting or welding.

(d) Shall secure authorization for the cutting or welding operations from the designated management representative.

(i) Shall determine that the cutter or welder secures his approval that conditions are safe before going ahead.

(ii) Shall determine that fire protection and extinguishing equipment are properly located at the site.

(iii) Where fire watches are required, he shall see that they are available at the site.

(15) Fire prevention precautions. Cutting or welding shall be permitted only in areas that are or have been made fire safe. Within the confines of an operating plant or building, cutting and welding should preferably be done in a specific area designed for such work, such as a maintenance shop or a detached outside location. Such areas should be of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas. When work cannot be moved practically, as in most construction work, the area shall be made safe by removing combustibles or protecting combustibles from ignition sources.

[Order 73-5, § 296-24-69503, filed 5/9/73 and Order 73-4, § 296-24-69503, filed 5/7/73.]

WAC 296-24-69505 Welding or cutting containers. (1) Used containers. No welding, cutting, or other hot work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present or any substances such as greases, tars, acids, or other materials which when subjected to heat, might produce flammable or toxic vapors. Any pipe lines or connections to the drum or vessel shall be disconnected or blanked.

(2) Venting and purging. All hollow spaces, cavities or containers shall be vented to permit the escape of air or gases before preheating, cutting or welding. Purging with inert gas is recommended.

[Order 73-5, § 296-24-69505, filed 5/9/73 and Order 73-4, § 296-24-69505, filed 5/7/73.]

WAC 296-24-69507 Confined spaces. (1) Accidental contact. When arc welding is to be suspended for any substantial period of time such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine be disconnected from the power source.

(2) Torch valve. In order to eliminate the possibility of gas escaping through leaks or improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the gas supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable, the torch and hose shall also be removed from the confined space.

[Order 73-5, § 296-24-69507, filed 5/9/73 and Order 73-4, § 296-24-69507, filed 5/7/73.]

WAC 296-24-700 Protection of employees.

[Order 73-5, § 296-24-700, filed 5/9/73 and Order 73-4, § 296-24-700, filed 5/7/73.]

WAC 296-24-70001 General. (1) Railing. A welder or helper working on platforms, scaffolds, or runways shall be protected against falling. This may be accomplished by the use of railings, safety belts, life lines, or some other equally effective safeguards.

(2) Welding cable. Welders shall place welding cable and other equipment so that it is clear of passageways, ladders, and stairways.

[Order 73-5, § 296-24-70001, filed 5/9/73 and Order 73-4, § 296-24-70001, filed 5/7/73.]

WAC 296-24-70003 Eye protection. (1) Selection.

(a) Helmets or hand shields shall be used during all arc welding or arc cutting operations, excluding submerged arc welding. Goggles should also be worn during arc welding or cutting operations to provide protection from injurious rays from adjacent work, and from flying objects. The goggles may have either clear or colored glass, depending upon the amount of exposure to adjacent welding operations. Helpers or attendants shall be provided with proper eye protection.

(b) Goggles or other suitable eye protection shall be used during all gas welding or oxygen cutting operations. Spectacles without side shields, with suitable filter lenses are permitted for use during gas welding operations on light work, for torch brazing or for inspection.

(c) All operators and attendants of resistance welding or resistance brazing equipment shall use transparent face shields or goggles, depending on the particular job, to protect their faces or eyes, as required.

(d) Eye protection in the form of suitable goggles shall be provided where needed for brazing operations not covered in (1)(a), (b) and (c) of this section.

(2) Specifications for protectors.

(a) Helmets and hand shields shall be made of a material which is an insulator for heat and electricity. Helmets, shields and goggles shall be not readily flammable and shall be capable of understanding sterilization.

(b) Helmets and hand shields shall be arranged to protect the face, neck and ears from direct radiant energy from the arc.

(c) Helmets shall be provided with filter plates and cover plates designed for easy removal.

(d) All parts shall be constructed of a material which will not readily corrode or discolor the skin.

(e) Goggles shall be ventilated to prevent fogging of the lenses as much as practicable.

(f) Cover lenses or plates should be provided to protect each helmet, hand shield or goggle filter lens or plate.

(g) All glass for lenses shall be tempered, substantially free from striae, air bubbles, waves and other flaws. Except when a lens is ground to provide proper optical correction for defective vision, the front and rear surfaces of lenses and windows shall be smooth and parallel.

(h) Lenses shall bear some permanent distinctive marking by which the source and shade may be readily identified.

(i) The following is a guide for the selection of the proper shade numbers. These recommendations may be varied to suit the individual's needs.

Welding Operation	Shade No.
Shielded metal-arc welding—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	10
Gas-shielded arc welding (nonferrous)—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	11
Gas-shielded arc welding (ferrous)—1/16-, 3/32-, 1/8-, 5/32-inch electrodes	12
Shielded metal-arc welding: 3/16-, 7/32-, 1/4-inch electrodes	12
5/16-, 3/8-inch electrodes	14
Atomic hydrogen welding	10-14
Carbon arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, 6 inches and over	5 or 6
Gas welding (light) up to 1/8 inch	4 or 5
Gas welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy) 1/2 inch and over	6 or 8

Note: In gas welding or oxygen cutting where the torch produces a high yellow light, it is desirable to use a filter or lens that absorbs the yellow or sodium line in the visible light of the operation.

(j) All filter lenses and plates shall meet the test for transmission of radiant energy prescribed in ANSI Z 87.1-1968—American National Standard Practice for Occupational and Educational Eye and Face Protection.

(3) Protection from arc welding rays. Where the work permits, the welder should be enclosed in an individual booth painted with a finish of low-reflectivity such as zinc oxide (an important factor for absorbing ultraviolet radiations) and lamp black, or shall be enclosed with noncombustible screens similarly painted. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate goggles.

[Order 73-5, § 296-24-70003, filed 5/9/73 and Order 73-4, § 296-24-70003, filed 5/7/73.]

WAC 296-24-70005 Protective clothing. (1) General requirements. Employees exposed to the hazards

created by welding, cutting, or brazing operations shall be protected by personal protective equipment in accordance with the requirements of WAC 296-24-07501. Appropriate protective clothing required for any welding operation will vary with the size, nature and location of the work to be performed.

(2) Specified protective clothing. Protective means which may be employed are as follows:

(a) Except when engaged in light work, all welders should wear flameproof gauntlet gloves.

(b) Flameproof aprons made of leather, asbestos, or other suitable material may also be desirable as protection against radiated heat and sparks.

(c) Woolen clothing preferable to cotton because it is not so readily ignited and helps protect the welder from changes in temperature. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All outer clothing such as jumpers or overalls should be reasonably free from oil or grease.

(d) Sparks may lodge in rolled-up sleeves or pockets of clothing, or cuffs of overalls or trousers. It is therefore recommended that sleeves and collars be kept buttoned and pockets be eliminated from the front of overalls and aprons. Trousers or overalls should not be turned up on the outside.

Note: For heavy work, fire-resistant leggings, high boots, or other equivalent means should be used.

(e) In production work a sheet metal screen in front of the worker's legs can provide further protection against sparks and molten metal in cutting operations.

(f) Capes or shoulder covers made of leather or other suitable materials should be worn during overhead welding or cutting operations. Leather skull caps may be worn under helmets to prevent head burns.

(g) For overhead welding and cutting, or welding and cutting in extremely confined spaces, ear protection is sometimes desirable.

(h) Where there is exposure to sharp or heavy falling objects, or a hazard of bumping in confined spaces, hard hats or head protectors shall be used.

[Order 73-5, § 296-24-70005, filed 5/9/73 and Order 73-4, § 296-24-70005, filed 5/7/73.]

WAC 296-24-70007 Work in confined spaces. (1) General. As used herein confined space is intended to mean a relatively small or restricted space such as a tank, boiler, pressure vessel, or small compartment of a ship.

(2) Ventilation. Ventilation is a prerequisite to work in confined spaces. For ventilation requirements see WAC 296-24-71501 through 296-24-71525.

(3) Securing cylinders and machinery. When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines shall be left on the outside. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.

(4) Lifelines. Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

(5) Electrode removal. When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

(6) Gas cylinder shutoff. In order to eliminate the possibility of gas escaping through leaks or improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable the torch and hose shall also be removed from the confined space.

(7) Warning sign. After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning other workers.

[Order 73-5, § 296-24-70007, filed 5/9/73 and Order 73-4, § 296-24-70007, filed 5/7/73.]

WAC 296-24-715 Health protection and ventilation.

[Order 73-5, § 296-24-715, filed 5/9/73 and Order 73-4, § 296-24-715, filed 5/7/73.]

WAC 296-24-71501 General. (1) Contamination. The requirements in this section have been established on the basis of the following three factors in arc and gas welding which govern the amount of contamination to which welders may be exposed:

(a) Dimensions of space in which welding is to be done (with special regard to height of ceiling).

(b) Number of welders.

(c) Possible evolution of hazardous fumes, gases, or dust according to the metals involved.

(2) Ventilation. It is recognized that in individual instances other factors may be involved in which case ventilation or respiratory protective devices should be provided as needed to meet the equivalent requirements of this section. Such factors would include:

(a) Atmospheric conditions.

(b) Heat generated.

(c) Presence of volatile solvents.

(3) Screens. When welding must be performed in a space entirely screened on all sides, the screens shall be so arranged that no serious restriction of ventilation exists. It is desirable to have the screens so mounted that they are about 2 feet above the floor unless the work is performed at so low a level that the screen must be extended nearer to the floor to protect nearby workers from the glare of welding.

(4) Maximum allowable concentration. Local exhaust or general ventilating systems shall be provided and arranged to keep the amount of toxic fumes, gases, or

dusts below the maximum allowable concentration as specified in chapter 296-62 WAC.

Note: A number of potentially hazardous materials are employed in fluxes, coatings, coverings, and filler metals used in welding and cutting or are released to the atmosphere during welding and cutting. These include but are not limited to the materials itemized in WAC 296-24-71509 through 296-24-71523.

(5) Precautionary labels. The employer shall ascertain the potentially hazardous materials, associated with welding, cutting, etc., and inform the employee of same wither through signs, labels or other appropriate means.

(a) All filler metals and fusible granular materials shall carry the following notice, as a minimum, on tags, boxes, or other containers:

CAUTION

Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. Use adequate ventilation. See ANSI Z 49.1-1967 Safety in Welding and Cutting published by the American Welding Society.

(b) Brazing (welding) filler metals containing cadmium in significant amounts shall carry the following notice on tags, boxes, or other containers:

WARNING
CONTAINS CADMIUM—POISONOUS FUMES MAY BE FORMED ON HEATING

Do not breathe fumes. Use only with adequate ventilation such as fume collectors, exhaust ventilators, or air-supplied respirators. See ANSI Z 49.1-1967.

If chest pain, cough, or fever develops after use call physician immediately.

Keep children away when using.

(c) Brazing and gas welding fluxes containing fluorine compounds shall have a cautionary wording to indicate that they contain fluorine compounds. One such cautionary wording recommended by the American Welding Society for brazing and gas welding fluxes reads as follows:

CAUTION
CONTAINS FLUORIDES

This flux when heated gives off fumes that may irritate eyes, nose and throat.

(i) Avoid fumes-use only in well-ventilated spaces.

(ii) Avoid contact of flux with eyes or skin.

(iii) Do not take internally.

[Order 73-5, § 296-24-71501, filed 5/9/73 and Order 73-4, § 296-24-71501, filed 5/7/73.]

WAC 296-24-71503 Ventilation for general welding and cutting. (1) General. Mechanical ventilation shall be provided when welding or cutting is done on metals not covered in WAC 296-24-71509 through 296-24-71523. (For specific material, see the ventilation requirements of WAC 296-24-71509 through 296-24-71523.)

(a) In a space of less than 10,000 cubic feet per welder.

(b) In a room having a ceiling height of less than 16 feet.

(c) In confined spaces or where the welding space contains partitions, balconies, or other structural barriers to the extent that they significantly obstruct cross ventilation.

(2) Minimum rate. Such ventilation shall be at the minimum rate of 2,000 cubic feet per minute per welder, except where local exhaust hoods and booths as per WAC 296-24-71505, or airline respirators approved by the U.S. Bureau of Mines for such purposes are provided. Natural ventilation is considered sufficient for welding or cutting operations where the restrictions in WAC 296-24-71503(1) are not present.

[Order 73-5, § 296-24-71503, filed 5/9/73 and Order 73-4, § 296-24-71503, filed 5/7/73.]

WAC 296-24-71505 Local exhaust hoods and booths. Mechanical local exhaust ventilation may be by means of either of the following:

(1) Hoods. Freely movable hoods intended to be placed by the welder as near as practicable to the work being welded and provided with a rate of airflow sufficient to maintain a velocity in the direction of the hood of 100 linear feet per minute in the zone of welding when the hood is at its most remote distance from the point of welding. The rates of ventilation required to accomplish this control velocity using a 3-inch wide flanged suction opening are shown in the following table:

Welding zone	Minimum air flow[1] cubic feet/minutes	Duct diameter inches[2]
4 to 6 inches from arc or torch—	150	3
6 to 8 inches from arc or torch—	275	3 1/2
8 to 10 inches from arc or torch—	425	4 1/2
10 to 12 inches from arc or torch—	600	5 1/2

[1]When brazing with cadmium bearing materials or when cutting on such materials increased rates of ventilation may be required.

[2]Nearest half-inch duct diameter based on 4,000 feet per minute velocity in pipe.

(2) Fixed enclosure. A fixed enclosure with a top and not less than two sides which surround the welding or cutting operations and with a rate of airflow sufficient to maintain a velocity away from the welder of not less than 100 linear feet per minute.

[Order 73-5, § 296-24-71505, filed 5/9/73 and Order 73-4, § 296-24-71505, filed 5/7/73.]

WAC 296-24-71507 Ventilation in confined spaces. (1) Air replacement. All welding and cutting operations carried on in confined spaces shall be adequately ventilated to prevent the accumulation of toxic materials or possible oxygen deficiency. This applies not only to the welder but also to helpers and other personnel in the immediate vicinity. All air replacing that withdrawn shall be clean and respirable.

(2) Airline respirators. In such circumstances where it is impossible to provide such ventilation, airline respirators or hose masks approved by the U.S. Bureau of Mines for this purpose shall be used.

(3) Self-contained units. In areas immediately hazardous to life, hose masks with blowers or self-contained breathing equipment shall be used. The breathing equipment shall be approved by the U.S. Bureau of Mines.

(4) Outside helper. Where welding operations are carried on in confined spaces and where welders and helpers are provided with hose masks, hose masks with blowers or self-contained breathing equipment approved by the U.S. Bureau of Mines, a worker shall be stationed on the outside of such confined spaces to insure the safety of those working within.

(5) Oxygen for ventilation. Oxygen shall not be used for ventilation.

[Order 73-5, § 296-24-71507, filed 5/9/73 and Order 73-4, § 296-24-71507, filed 5/7/73.]

WAC 296-24-71509 Fluorine compounds. (1) General. In confined spaces, welding or cutting involving fluxes, coverings, or other materials which contain fluorine compounds shall be done in accordance with WAC 296-24-71507 (1) through (5). A fluorine compound is one that contains fluorine, as an element in chemical combination, not as a free gas.

Note: Maximum allowable concentration. The need for local exhaust ventilation or airline respirators for welding or cutting in other than confined spaces will depend upon the individual circumstances. However, experience has shown such protection to be desirable for fixed-location production welding and for all production welding on stainless steels. Where air samples taken at the welding location indicate that the fluorides liberated are below the maximum allowable concentration, such protection is not necessary.

[Order 73-5, § 296-24-71509, filed 5/9/73 and Order 73-4, § 296-24-71509, filed 5/7/73.]

WAC 296-24-71511 Zinc. (1) Confined spaces. In confined spaces welding or cutting involving zinc-bearing base or filler metals or metals coated with zinc-bearing materials shall be done in accordance with WAC 296-24-71507 (1) through (5).

(2) Indoors. Indoors, welding or cutting involving zinc-bearing base or filler metals coated with zinc-bearing materials shall be done in accordance with WAC 296-24-71505 (1) and (2).

[Order 73-5, § 296-24-71511, filed 5/9/73 and Order 73-4, § 296-24-71511, filed 5/7/73.]

WAC 296-24-71513 Lead. (1) Confined spaces. In confined spaces, welding involving lead-base metals (erroneously called lead-burning) shall be done in accordance with WAC 296-24-71507 (1) through (5).

(2) Indoors. Indoors, welding involving lead-base metals shall be done in accordance with WAC 296-24-71505 (1) and (2).

(3) Local ventilation. In confined spaces or indoors, welding or cutting involving metals containing lead, other than as an impurity, or involving metals coated with lead-bearing materials, including paint shall be done using local exhaust ventilation or airline respirators. Outdoors such operations shall be done using respiratory protective equipment approved by the U.S. Bureau of Mines for such purposes. In all cases, workers in the immediate vicinity of the cutting operation shall be protected as necessary by local exhaust ventilation or airline respirators.

[Order 73-5, § 296-24-71513, filed 5/9/73 and Order 73-4, § 296-24-71513, filed 5/7/73.]

WAC 296-24-71515 Beryllium. Welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base or filler metals shall be done using local exhaust ventilation and airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. In all cases, workers in the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators.

[Order 73-5, § 296-24-71515, filed 5/9/73 and Order 73-4, § 296-24-71515, filed 5/7/73.]

WAC 296-24-71517 Cadmium. (1) General. Welding or cutting indoors or in confined spaces involving cadmium-bearing or cadmium-coated base metals shall be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. Outdoors such operations shall be done using respiratory protective equipment such as fume respirators approved by the U.S. Bureau of Mines for such purposes.

(2) Confined space. Welding (brazing) involving cadmium-bearing filler metals shall be done using ventilation as prescribed in WAC 296-24-71505 or 296-24-71507 if the work is to be done in a confined space.

[Order 73-5, § 296-24-71517, filed 5/9/73 and Order 73-4, § 296-24-71517, filed 5/7/73.]

WAC 296-24-71519 Mercury. Welding or cutting indoors or in a confined space involving metals coated with mercury-bearing materials including paint, shall be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by chapter 296-62 WAC. Outdoors such operations shall be done using respiratory protective equipment approved by the U.S. Bureau of Mines for such purposes.

[Order 73-5, § 296-24-71519, filed 5/9/73 and Order 73-4, § 296-24-71519, filed 5/7/73.]

WAC 296-24-71521 Cleaning compounds. (1) Manufacturer's instructions. In the use of cleaning materials, because of their possible toxicity of flammability, appropriate precautions such as manufacturer's instructions shall be followed.

(2) Degreasing. Degreasing or other cleaning operations involving chlorinated hydrocarbons shall be so located that no vapors from these operations will reach or be drawn into the atmosphere surrounding any welding operation. In addition, trichloroethylene and perchlorethylene should be kept out of atmospheres penetrated by the ultraviolet radiation of gas-shielded welding operations.

[Order 73-5, § 296-24-71521, filed 5/9/73 and Order 73-4, § 296-24-71521, filed 5/7/73.]

WAC 296-24-71523 Cutting of stainless steels. Oxygen cutting, using either a chemical flux or iron powder or gas-shielded arc cutting of stainless steel, shall be done using mechanical ventilation adequate to remove the fumes generated.

[Order 73-5, § 296-24-71523, filed 5/9/73 and Order 73-4, § 296-24-71523, filed 5/7/73.]

WAC 296-24-71525 First-aid equipment. First-aid equipment shall be available at all times. On every shift of welding operations there should be present employees trained to render first aid. All injuries shall be reported as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

[Order 73-5, § 296-24-71525, filed 5/9/73 and Order 73-4, § 296-24-71525, filed 5/7/73.]

WAC 296-24-720 Industrial applications.

[Order 73-5, § 296-24-720, filed 5/9/73 and Order 73-4, § 296-24-720, filed 5/7/73.]

WAC 296-24-72001 Transmission pipeline. (1) General. The requirements of WAC 296-24-68501 through 296-24-68507, 296-24-70001 through 296-24-70007, and 296-24-71501 through 296-24-71525, shall be observed.

(2) Field shop operations. Where field shop operations are involved for fabrication of fittings, river crossings, road crossings, and pumping and compressor stations the requirements of WAC 296-24-68001, 296-24-68501 through 296-24-68507, 296-24-69501 through 296-24-69507, 296-24-70001 through 296-24-70007 and 296-24-71501 through 296-24-71525 shall be observed.

(3) Electric shock. When arc welding is performed in wet conditions, or under conditions of high humidity, special protection against electric shock shall be supplied.

(4) Pressure testing. In pressure testing of pipelines, the workers and the public shall be protected against injury by the blowing out of closures or other pressures restraining devices. Also, protection shall be provided against expulsion of loose dirt that may have become trapped in the pipe.

(5) Construction standards. The welded construction of transmission pipelines shall be conducted in accordance with the Standard for Welding Pipe Lines and Related Facilities, API Std. 1104-1968.

(6) Flammable substance lines. The connection, by welding, of branches to pipelines carrying flammable substances shall be performed in accordance with Welding or Hot Tapping on Equipment Containing Flammables, API Std. PSD No. 2201-1963.

(7) X-ray inspection. The use of x-rays and radioactive isotopes for the inspection of welded pipeline joints shall be carried out in conformance with the American National Standard Safety Standard for Nonmedical X-ray and Sealed Gamma-Ray Sources, ANSI Z 54.1-1963.

[Order 73-5, § 296-24-72001, filed 5/9/73 and Order 73-4, § 296-24-72001, filed 5/7/73.]

WAC 296-24-72003 Mechanical piping systems. (1) General. The requirements of WAC 296-24-68001, 296-24-68501 through 296-24-68507, 296-24-69501 through 296-24-69507, 296-24-70001 through 296-24-70007 and 296-24-71501 through 296-24-71525 shall be observed.

(2) X-ray inspection. The use of x-rays and radioactive isotopes for the inspection of welded piping joints shall be in conformance with the American National Standard Safety Standard for Nonmedical X-ray and Sealed Gamma-Ray Sources, ANSI Z 54.1-1963.

[Order 73-5, § 296-24-72003, filed 5/9/73 and Order 73-4, § 296-24-72003, filed 5/7/73.]

WAC 296-24-722 Welding, cutting, and heating in way of preservative coatings. (1) Before welding, cutting, or heating is commenced on any surface covered by a preservative coating whose flammability is not known, a test shall be made by a competent person to determine its flammability. Preservative coatings shall be considered to be highly flammable when scrapings burn with extreme rapidity.

(2) Precautions shall be taken to prevent ignition of highly flammable hardened preservative coatings. When coatings are determined to be highly flammable, they shall be stripped from the area to be heated to prevent ignition.

(3) Protection against toxic preservative coatings:

(a) In enclosed spaces, all surfaces covered with toxic preservatives shall be stripped of all toxic coatings for a distance of at least 4 inches from the area of heat application, or the employees shall be protected by air line respirators, meeting the requirements specified in these rules for this type of work.

(b) In the open air, employees shall be protected by a respirator, suitable for the type of work being done.

(4) The preservative coatings shall be removed a sufficient distance from the area to be heated to ensure that the temperature of the unstripped metal will not be appreciably raised. Artificial cooling of the metal surrounding the heating area may be used to limit the size of the area required to be cleaned.

[Order 73-5, § 296-24-722, filed 5/9/73 and Order 73-4, § 296-24-722, filed 5/7/73.]

Part J-1

WORKING SURFACES, GUARDING FLOORS AND WALL OPENINGS, LADDERS, SCAFFOLDS

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WAC 296-24-735 Walking-working surfaces.

[Order 73-5, § 296-24-735, filed 5/9/73 and Order 73-4, § 296-24-735, filed 5/7/73.]

WAC 296-24-73501 General requirements. This section applies to all permanent places of employment, except where domestic, mining, or agricultural work only is performed. Construction work is not to be deemed as a permanent place of employment. Measures for the control of toxic materials are considered to be outside the scope of this section.

[Order 73-5, § 296-24-73501, filed 5/9/73 and Order 73-4, § 296-24-73501, filed 5/7/73.]

WAC 296-24-73503 Housekeeping. (1) All places of employment, passageways, storerooms, and service rooms shall be kept clean, orderly and in a sanitary condition.

(2) The floor of every workroom shall be maintained in a clean, and so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats, or other dry standing places shall be provided where practicable.

(3) To facilitate cleaning, every floor, working place, and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.

(4) All materials stored in tiers shall be stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.

[Order 74-27, § 296-24-73503, filed 5/7/74; Order 73-5, § 296-24-73503, filed 5/9/73 and Order 73-4, § 296-24-73503, filed 5/7/73.]

WAC 296-24-73505 Aisles and passageways. (1) Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repairs, with no obstruction across or in aisles that could create a hazard.

(2) Permanent aisles and passageways shall be appropriately marked.

(3) All trestles in connection with industrial plants on which cars run, which are also used as walkways for workmen, shall be equipped with a walkway on the outer edge, so located as to give safe minimum clearance of three feet to cars. Such walkways shall be equipped with standard rails. Where a trestle crosses a driveway or

passageway the trestle over such points shall be solidly boarded over.

[Order 73-5, § 296-24-73505, filed 5/9/73 and Order 73-4, § 296-24-73505, filed 5/7/73.]

WAC 296-24-73507 Covers and guardrails. (1) All open vats and tanks into which workers may fall shall be guarded with railings or screen guards.

(2) All open vats and tanks where workers are employed shall have a platform or walkway 36 to 42 inches below the top of vat or tank or where walkway is flush with top of vat or tank, a standard safeguard of 36 to 42 inches high shall be constructed.

(3) Every tank over 5 feet deep, excepting where agitators are used or where products may be damaged by ladders, shall have a ladder fixed on the inside so placed as to connect with means of access from the outside. Rungs shall have a clearance of at least 6 inches measured between the rung and the side of the tank.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-73507, filed 7/31/79; Order 74-27, § 296-24-73507, filed 5/7/74; Order 73-5, § 296-24-73507, filed 5/9/73 and Order 73-4, § 296-24-73507, filed 5/7/73.]

WAC 296-24-73509 Floor loading protection. (1) In every building or other structure, or part thereof, used for mercantile, business, industrial, or storage purposes, the loads approved by the building official shall be marked on plates of approved design which shall be supplied and securely affixed by the owner of the building, or his duly authorized agent, in a conspicuous place in each space to which they relate. Such plates shall not be removed or defaced but, if lost, removed, or defaced, shall be replaced by the owner or his agent.

(2) It shall be unlawful to place, or cause, or permit to be placed, on any floor or roof of a building or other structure a load greater than that for which such floor or roof is approved by the building official.

[Order 73-5, § 296-24-73509, filed 5/9/73 and Order 73-4, § 296-24-73509, filed 5/7/73.]

WAC 296-24-73511 Steam pipes. (1) All steam pipes or pipes heated by any other means to a sufficient temperature to burn a person (other than coil pipes, radiators, for heating rooms or buildings, or pipes on portable steam engines and boilers) and which are within seven feet of a floor or platform, if exposed to contact, shall be guarded with a standard safeguard.

(2) Protection from hot pipes. All exposed hot pipes within seven feet of the floor or working platform, or within 15 inches measured horizontally from stairways, ramps or fixed ladders, shall be covered with an insulating material or be guarded in such a manner as to prevent contact.

[Order 74-27, § 296-24-73511, filed 5/7/74.]

WAC 296-24-73513 Buildings--Floors. (1) All buildings, docks, tramways, walkways, log dumps and other structures shall be so designed, constructed, and maintained as to provide a safety factor of 4. This means that all members shall be capable of supporting four times the maximum strain to be imposed. This provision refers to buildings, docks, etc. designed and constructed subsequent to the effective date of these standards and also refers in all cases where either complete or major changes or repairs are made to such buildings, docks, tramways, walkways, log dumps and other structures.

(2) The floors of all buildings, platforms, walks and driveways, storage yards, docks, etc., and all parts thereof, and all supporting members shall be of substantial construction and kept in good repair and free from accumulations of debris. Floors which are maintained in a polished condition shall be polished with a nonslip preparation of an approved type.

(3) Flooring of buildings, ramps, docks, trestles and other structures required to support motive equipment shall be of not less than full two and one-half inch material. However, where flooring is covered by steel floor plates, 2 inch material may be used.

[Order 74-27, § 296-24-73513, filed 5/7/74.]

WAC 296-24-750 Guarding floor and wall openings and holes.

[Order 73-5, § 296-24-750, filed 5/9/73 and Order 73-4, § 296-24-750, filed 5/7/73.]

WAC 296-24-75001 Terms. The following terms shall have the meaning ascribed in this section, when referred to in WAC 296-24-75003 through 296-24-75011, unless the context requires otherwise.

(1) Floor hole. An opening measuring less than 12 inches but more than 1 inch in its least dimension, in any floor, platform, pavement, or yard, through which materials but not persons may fall; such as a belt hole, pipe opening, or slot opening.

(2) Floor opening. An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard, through which persons may fall; such as a hatchway, stair or ladder opening, pit, or large manhole. Floor openings occupied by elevators, dumb waiters, conveyors, machinery, or containers are excluded from this subpart.

(3) Handrail. A single bar or pipe supported on brackets from a wall or partition, as on a stairway or ramp, to furnish persons with a handhold in case of tripping.

(4) Platform. A working space for persons, elevated above the surrounding floor or ground; such as a balcony or platform for the operation of machinery and equipment.

(5) Runway. A passageway for persons, elevated above the surrounding floor or ground level, such as a footwalk along shafting or a walkway between buildings.

(6) Standard railing. A vertical barrier erected along exposed edges of a floor opening, wall opening, ramp, platform, or runway to prevent falls of person.

(7) Standard strength and construction. Any construction of railings, covers, or other guards that meets the requirements of WAC 296-24-750 through 296-24-75011.

(8) Stair railing. A vertical barrier erected along exposed sides of a stairway to prevent falls of persons.

(9) Toeboard. A vertical barrier at floor level erected along exposed edges of a floor opening, wall opening, platform, runway, or ramp to prevent falls of materials.

(10) Wall hole. An opening less than 30 inches but more than 1 inch high, of unrestricted width, in any wall or partition; such as a ventilation hole or drainage scupper.

(11) Wall opening. An opening at least 30 inches high and 18 inches wide, in any wall or partition, through which persons may fall; such as a yard-arm doorway or chute opening.

[Order 73-5, § 296-24-75001, filed 5/9/73 and Order 73-4, § 296-24-75001, filed 5/7/73.]

WAC 296-24-75003 Protection for floor openings. (1) Every stairway floor opening shall be guarded by a standard railing constructed in accordance with WAC 296-24-75011. The railing shall be provided on all exposed sides (except at entrance to stairway). For infrequently used stairways where traffic across the opening prevents the use of fixed standard railing (as when located in aisle spaces, etc.), the guard shall consist of a hinged floor opening cover of standard strength and construction and removable standard railings on all exposed sides (except at entrance to stairway).

(2) Every ladderway floor opening or platform shall be guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset that a person cannot walk directly into the opening.

(3) Every hatchway and chute floor opening shall be guarded by one of the following:

(a) Hinged floor opening cover of standard strength and construction equipped with standard railings or permanently attached thereto so as to leave only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard railings.

(b) A removable railing with toeboard on not more than two sides of the opening and fixed standard railings with toeboards on all other exposed sides. The removable railings shall be kept in place when the opening is not in use and should preferably be hinged or otherwise mounted so as to be conveniently replaceable.

Where operating conditions necessitate the feeding of material into any hatchway or chute opening, protection shall be provided to prevent a person from falling through the opening.

(c) The area under floor openings shall, where practical, be fenced off. When this is not practical, the areas shall be plainly marked with yellow lines and telltales shall be installed to hang within five and one-half feet of ground or floor level.

(d) Where floor openings are used to drop materials from one level to another, audible warning systems shall be installed and used to indicate to employees on the lower level that material is to be dropped.

(4) Every skylight opening and hole shall be guarded by a standard skylight screen or a fixed standard railing on all exposed sides.

(5) Every pit and trapdoor floor opening, infrequently used, shall be guarded by a floor opening cover of standard strength and construction which should be hinged in place. While the cover is not in place, the pit or trap opening shall be constantly attended by someone or shall be protected on all exposed sides by removable standard railings.

(6) Every manhole floor opening shall be guarded by a standard manhole cover which need not be hinged in place. While the cover is not in place, the manhole opening shall be constantly attended by someone or shall be protected by removable standard railings.

(7) Every temporary floor opening shall have standard railings, or shall be constantly attended by someone.

(8) Every floor hole into which persons can accidentally walk shall be guarded by either:

(a) A standard railing with standard toeboard on all exposed sides, or

(b) A floor hole cover of standard strength and construction that should be hinged in place. While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.

(9) Every floor hole into which persons cannot accidentally walk (on account of fixed machinery, equipment, or walls) shall be protected by a cover that leaves no openings more than 1 inch wide. The cover shall be securely held in place to prevent tools or materials from falling through.

(10) Where doors or gates open directly on a stairway, a platform shall be provided, and the swing of the door shall not reduce the effective width to less than 20 inches.

[Order 74-27, § 296-24-75003, filed 5/7/74; Order 73-5, § 296-24-75003, filed 5/9/73 and Order 73-4, § 296-24-75003, filed 5/7/73.]

WAC 296-24-75005 Protection for wall openings and holes. (1) Every wall opening from which there is a drop of more than 4 feet shall be guarded by one of the following:

(a) Rail, roller, picket fence, half door, or equivalent barrier.

The guard may be removable but should preferably be hinged or otherwise mounted so as to be conveniently replaceable. Where there is exposure below to falling materials, a removable toeboard or the equivalent shall also be provided. When the opening is not in use for handling materials, the guard shall be kept in position regardless of a door on the opening. In addition, a grab handle shall be provided on each side of the opening with its center approximately 4 feet above floor level and of standard strength and mounting.

(b) Extension platform onto which materials can be hoisted for handling, and which shall have side rails or equivalent guards of standard specifications.

(2) Every chute wall opening from which there is a drop of more than 4 feet shall be guarded by one or

more of the barriers specified in WAC 296-24-75005 (1)(a) and (b), or as required by the conditions.

(3) Every window wall opening at a stairway landing, floor, platform, or balcony, from which there is a drop of more than 4 feet, and where the bottom of the opening is less than 3 feet above the platform or landing, shall be guarded by standard slats, standard grill work (as specified in WAC 296-24-75011(11)), or standard railing.

Where the window opening is below the landing, or platform, a standard toeboard shall be provided.

(4) Every temporary wall opening shall have adequate guards but these need not be of standard construction.

(5) Where there is a hazard of materials falling through a wall hole, and the lower edge of the near side of the hole is less than 4 inches above the floor, and the far side of the hole more than 5 feet above the next lower level, the hole shall be protected by a standard toeboard, or an enclosing screen either of sold construction, or as specified in WAC 296-24-75011(11).

[Order 73-5, § 296-24-75005, filed 5/9/73 and Order 73-4, § 296-24-75005, filed 5/7/73.]

WAC 296-24-75007 Protection of open-sided floors, platforms and runways. (1) Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing (or the equivalent as specified in WAC 296-24-75011(3)) on all open sides, except where there is entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toeboard wherever, beneath the open sides,

(a) Person can pass,

(b) There is moving machinery, or

(c) There is equipment with which falling materials could create a hazard.

(2) Every runway shall be guarded by a standard railing (or the equivalent as specified in WAC 296-24-75011(3) on all open sides 4 feet or more above floor or ground level. Wherever tools, machine parts, or materials are likely to be used on the runway, a toeboard shall also be provided on each exposed side.

Runways used exclusively for special purposes (such as oiling, shafting, or filling tank cars) may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway of not less than 18 inches wide. Where persons entering upon runways become thereby exposed to machinery, electrical equipment, or other danger not a falling hazard, additional guarding than is here specified may be essential for protection.

(3) Regardless of height, open-sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment, pickling or galvanizing tanks, degreasing units, and similar hazards shall be guarded with a standard railing and toeboard.

(4) Tools and loose materials shall not be left on overhead platforms and scaffolds.

[Order 76-6, § 296-24-75007, filed 3/1/76; Order 73-5, § 296-24-75007, filed 5/9/73 and Order 73-4, § 296-24-75007, filed 5/7/73.]

WAC 296-24-75009 Stairway railings and guards. (1) Every flight of stairs having four or more risers shall be equipped with standard stair railings or standard handrails as specified in (a) through (e) of this rule, the width of the stair to be measured clear of all obstructions except handrails:

(a) On stairways less than 44 inches wide having both sides enclosed, at least one handrail, preferably on the right side descending.

(b) On stairways less than 44 inches wide having one side open, at least one stair railing on open side.

(c) On stairways less than 44 inches wide having both sides open, one stair railing on each side.

(d) On stairways more than 44 inches wide but less than 88 inches wide, one handrail on each enclosed side and one stair railing on each open side.

(e) On stairways 88 or more inches wide, one handrail on each enclosed side, one stair railing on each open side, and one intermediate stair railing located approximately midway of the width.

(2) Winding stairs shall be equipped with a handrail offset to prevent walking on all portions of the treads having width less than 6 inches.

[Order 73-5, § 296-24-75009, filed 5/9/73 and Order 73-4, § 296-24-75009, filed 5/7/73.]

WAC 296-24-75011 Railing, toeboards, and cover specifications. (1) A standard railing shall consist of top rail, intermediate rail, and posts, and shall have a vertical height of from 36 to 42 inches nominal from upper surface of top rail to floor, platform, runway, or ramp level. The top rail shall be smooth-surfaced throughout the length of the railing. The intermediate rail shall be approximately halfway between the top rail and the floor, platform, runway, or ramp. The ends of the rails shall not overhang the terminal posts except where such overhang does not constitute a projection hazard.

(2) A stair railing shall be of construction similar to a standard railing but the vertical height shall be not more than 34 inches nor less than 30 inches from upper surface of top rail to surface of tread in line with face of riser at forward edge of tread.

(3) Minimum requirements for standard railings under various types of construction are specified in this subsection. Dimensions specified are based on the U.S. Department of Agriculture Wood Handbook, No. 72, 1955 (No. 1 [S4S] Southern Yellow Pine [Modulus of Rupture 7,400 p.s.i.]) for wood; ANSI G 41.5-1970, American National Standard Specifications for Structural Steel, for structural steel; and ANSI B 125.1-1970, American National Standard Specifications for Welded and Steamless Steel Pipe, for pipe.

(a) For wood railings, the posts shall be of at least 2-inch by 4-inch nominal stock spaced not to exceed 6 feet; the top and intermediate rails shall be of at least 2-inch by 4-inch nominal stock. If top rail is made of two right-angle pieces of 1-inch by 4-inch stock, posts may be spaced on 8-foot centers, with 2-inch by 4-inch intermediate rail.

(b) For pipe railings, posts and top and intermediate railings shall be at least 1 1/2 inches nominal diameter with posts spaced not more than 8 feet on centers.

(c) For structural steel railings, posts and top and intermediate rails shall be of 2-inch by 2-inch by 3/8-inch angles or other metal shapes of equivalent bending strength with posts spaced not more than 8 feet on centers.

(d) The anchoring of posts and framing of members for railings of all types shall be of such construction that the completed structure shall be capable of withstanding a load of at least 200 pounds applied in any direction at any point on the top rail.

(e) Other types, sizes, and arrangements of railing construction are acceptable provided they meet the following conditions:

(i) A smooth-surfaced top rail at a height above floor, platform, runway, or ramp level of from 36 to 42 inches nominal;

(ii) A strength to withstand at least the minimum requirement of 200 pounds top rail pressure;

(iii) Protection between top rail and floor, platform, runway, ramp, or stair treads, equivalent at least to that afforded by a standard intermediate rail;

(iv) Elimination of overhang of rail ends unless such overhang does not constitute a hazard; such as, baluster railings, scrollwork railings, paneled railings.

(4) A standard toeboard shall be a minimum of 4 inches nominal in vertical height from its top edge to the level of the floor, platform, runway, or ramp. It shall be securely fastened in place and with not more than 1/4-inch clearance above floor level. It may be made of any substantial material either solid or with openings not over 1 inch in greatest dimension.

Where material is piled to such height that a standard toeboard does not provide protection, paneling from floor to intermediate rail, or to top rail shall be provided.

(5) A handrail shall consist of a lengthwise member mounted directly on a wall or partition by means of brackets attached to the lower side of the handrail so as to offer no obstruction to a smooth surface along the top and both sides of the handrail. The handrail shall be of rounded or other section that will furnish an adequate handhold for anyone grasping it to avoid falling. The ends of the handrail should be turned in to the supporting wall or otherwise arranged so as not to constitute a projection hazard.

(a) The height of handrails shall be not more than 34 inches nor less than 30 inches from upper surface of handrail to surface of tread in line with face of riser or to surface of ramp.

(b) The size of handrails shall be: When of hardwood, at least 2 inches in diameter; when of metal pipe, at least 1 1/2 inches in diameter. The length of brackets shall be such as will give a clearance between handrail and wall or any projection thereon of at least 1 1/2 inches. The spacing of brackets shall not exceed 8 feet.

(c) The mounting of handrails shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point on the rail.

(6) All handrails and railings shall be provided with a clearance of not less than 1 1/2 inches between the handrail or railing and any other object.

(7) Floor opening covers may be of any material that meets the following strength requirements:

(a) Trench or conduit covers and their supports, when located in plant roadways, shall be designed to carry a truck rear-axle load of at least 20,000 pounds.

(b) Manhole covers and their supports, when located in plant roadways, shall comply with local standard highway requirements if any; otherwise, they shall be designed to carry a truck rear-axle of at least 20,000 pounds.

(c) The construction of floor opening covers may be of any material that meets the strength requirements. Covers projecting not more than 1 inch above the floor level may be used providing all edges are chamfered to an angle with the horizontal of not over 30 degrees. All hinges, handles, bolts, or other parts shall set flush with the floor or cover surface.

(8) Skylight screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied perpendicularly at any one area on the screen. They shall also be of such construction and mounting that under ordinary loads or impacts, they will not deflect downward sufficiently to break the glass below them. The construction shall be of grillwork with openings not more than 4 inches long or of slat work with openings not more than 2 inches wide with length unrestricted.

(9) Wall opening barriers (rails, rollers, picket fences, and half doors) shall be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds applied in any direction (except upward) at any point on the top rail or corresponding member.

(10) Wall opening grab handles shall be not less than 12 inches in length and shall be so mounted as to give 1 1/2 inches clearance from the side framing of the wall opening. The size, material, and anchoring of the grab handle shall be such that the completed structure is capable of withstanding a load of at least 200 pounds applied in any direction at any point of the handle.

(11) Wall opening screens shall be of such construction and mounting that they are capable of withstanding a load of at least 200 pounds applied horizontally at any point on the near side of the screen. They may be of solid construction, of grillwork with openings not more than 8 inches long, or of slatwork with openings not more than 4 inches wide with length unrestricted.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-75011, filed 7/31/79; Order 73-5, § 296-24-75011, filed 5/9/73 and Order 73-4, § 296-24-75011, filed 5/7/73.]

WAC 296-24-765 Fixed industrial stairs.

[Order 73-5, § 296-24-765, filed 5/9/73 and Order 73-4, § 296-24-765, filed 5/7/73.]

WAC 296-24-76501 Terms. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-76503 through 296-24-76523 unless the context requires otherwise. (1) Handrail. A single bar or pipe supported on brackets from a wall or partition to provide a continuous handhold for persons using a stair.

(2) Nose, nosing. That portion of a tread projecting beyond the face of the riser immediately below.

(3) Open riser. The air space between the treads of stairways without upright members (risers).

(4) Platform. An extended step or landing breaking a continuous run of stairs.

(5) Railing. A vertical barrier erected along exposed sides of stairways and platforms to prevent falls of persons. The top member of railing usually serves as a handrail.

(6) Rise. The vertical distance from the top of a tread to the top of the next higher tread.

(7) Riser. The upright member of a step situated at the back of a lower tread and near the leading edge of the next higher tread.

(8) Stairs, stairway. A series of steps leading from one level or floor to another, or leading to platforms, pits, boiler rooms, crossovers, or around machinery, tanks, and other equipment that are used more or less continuously or routinely by employees, or only occasionally by specific individuals. A series of steps and landings having three or more risers constitutes stairs or stairway.

(9) Tread. The horizontal member of a step.

(10) Tread run. The horizontal distance from the leading edge of a tread to the leading edge of an adjacent tread.

(11) Tread width. The horizontal distance from front to back of tread including nosing when used.

[Order 73-5, § 296-24-76501, filed 5/9/73 and Order 73-4, § 296-24-76501, filed 5/7/73.]

WAC 296-24-76503 Application of requirements. This section contains specifications for the safe design and construction of fixed general industrial stairs. This classification includes interior and exterior stairs around machinery, tanks, and other equipment, and stairs leading to or from floors, platforms, or pits. This section does not apply to stairs used for fire exit purposes, to construction operations, to private residences, or to articulated stairs, such as may be installed on floating roof tanks or on dock facilities, the angle of which changes with the rise and fall of the base support.

[Order 73-5, § 296-24-76503, filed 5/9/73 and Order 73-4, § 296-24-76503, filed 5/7/73.]

WAC 296-24-76505 Where fixed stairs are required. Fixed stairs shall be provided for access from one structure level to another where operations necessitate regular travel between levels, and for access to operating platforms at any equipment which requires attention routinely during operations. Fixed stairs shall also be provided where access to elevations is daily or at each shift for such purposes as gauging, inspection, regular maintenance, etc., where such work may expose employees to acids, caustics, gases, or other harmful substances, or for which purposes the carrying of tools or equipment by hand is normally required. (It is not the intent of this section to preclude the use of fixed ladders for access to elevated tanks, towers, and similar structures, overhead traveling cranes, etc., where the use of fixed ladders is common practice.) Spiral stairways shall not be permitted except for special limited usage and secondary access situations where it is not practical to provide a conventional stairway. Winding stairways may be installed on tanks and similar round structures where the diameter of the structure is not less than five feet.

[Order 73-5, § 296-24-76505, filed 5/9/73 and Order 73-4, § 296-24-76505, filed 5/7/73.]

WAC 296-24-76507 Stair strength. Fixed stairways shall be designed and constructed to carry a load of five times the normal live load anticipated but never of less strength than to carry safely a moving concentrated load of 1,000 pounds.

[Order 73-5, § 296-24-76507, filed 5/9/73 and Order 73-4, § 296-24-76507, filed 5/7/73.]

WAC 296-24-76509 Stair width. Fixed stairways shall have a minimum width of 22 inches.

[Order 73-5, § 296-24-76509, filed 5/9/73 and Order 73-4, § 296-24-76509, filed 5/7/73.]

WAC 296-24-76511 Angle of stairway rise. Fixed stairs shall be installed at angles to the horizontal of between 30° and 50°. Any uniform combination of rise/tread dimensions may be used that will result in a stairway at any angle to the horizontal within the permissible range. Table D-1 gives rise/tread dimensions which will produce a stairway within the permissible range, stating the angle to the horizontal produced by each combination. However, the rise/tread combinations are not limited to those given in Table D-1.

[Order 73-5, § 296-24-76511, filed 5/9/73 and Order 73-4, § 296-24-76511, filed 5/7/73.]

WAC 296-24-76513 Stair treads. Each tread and the top landing of a stairway, where risers are used, should have a nose which extends one-half inch to 1 inch beyond the face of the lower riser. Noses should have an even leading edge. All treads shall be reasonably slip-resistant and the nosings shall be of nonslip finish. Welded bar grating treads without nosings are acceptable providing the leading edge can be readily identified by personnel descending the stairway and provided the tread is serrated or is of definite nonslip design. Rise height and tread width shall be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs.

TABLE D-1

Angle to horizontal	Rise (in inches)	Tread run (in inches)
30°35'	6 1/2	11
32°08'	6 3/4	10 3/4
33°41'	7	10 1/2
35°16'	7 1/4	10 1/4
36°52'	7 1/2	10
38°29'	7 3/4	9 3/4
40°08'	8	9 1/2
41°44'	8 1/4	9 1/4
43°22'	8 1/2	9
45°00'	8 3/4	8 3/4
46°38'	9	8 1/2
48°16'	9 1/4	8 1/4
49°54'	9 1/2	8

[Order 73-5, § 296-24-76513, filed 5/9/73 and Order 73-4, § 296-24-76513, filed 5/7/73.]

WAC 296-24-76515 Length of stairways. Long flights of stairs, unbroken by landings or intermediate platforms, should be avoided. Consideration should be given to providing intermediate platforms where practical and where such stairways are in frequent use. Stairway platforms shall be no less than the width of a stairway and a minimum of 30 inches in length measured in the direction of travel.

[Order 73-5, § 296-24-76515, filed 5/9/73 and Order 73-4, § 296-24-76515, filed 5/7/73.]

WAC 296-24-76517 Railings and handrails. Standard railings shall be provided on the open sides of all exposed stairways and stair platforms. Handrails shall be provided on at least one side of closed stairways, preferably on the right side descending. Stair railings and handrails shall be installed in accordance with the provisions of WAC 296-24-75001 through 296-24-75011.

[Order 73-5, § 296-24-76517, filed 5/9/73 and Order 73-4, § 296-24-76517, filed 5/7/73.]

WAC 296-24-76519 Vertical clearance. Vertical clearance above any stair tread to an overhead obstruction shall be at least 7 feet measured from the leading edge of the tread.

[Order 73-5, § 296-24-76519, filed 5/9/73 and Order 73-4, § 296-24-76519, filed 5/7/73.]

WAC 296-24-76521 Open risers. Stairs having treads of less than 9-inch width should have open risers.

[Order 73-5, § 296-24-76521, filed 5/9/73 and Order 73-4, § 296-24-76521, filed 5/7/73.]

WAC 296-24-76523 General. Open grating type treads are desirable for outside stairs.

[Order 73-5, § 296-24-76523, filed 5/9/73 and Order 73-4, § 296-24-76523, filed 5/7/73.]

WAC 296-24-780 Portable wood ladders. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-78003 through 296-24-78009 unless the context requires otherwise. (1) Ladders. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Stepladder. A stepladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

(3) Single ladder. A single ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rail.

(4) Extension ladder. An extension ladder is a nonself-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

(5) Sectional ladder. A sectional ladder is a nonself-supporting portable ladder, nonadjustable in length consisting of two or more sections of ladder so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

(6) Trestle ladder. A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

(7) Extension trestle ladder. An extension trestle ladder is a self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

(8) Special-purpose ladder. A special-purpose ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general-purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses.

(9) Trolley ladder. A trolley ladder is a semifixed ladder, nonadjustable in length, supported by attachments to an overhead track, the plane of the ladder being at right angles to the plane of motion.

(10) Side-rolling ladder. A side-rolling ladder is a semifixed ladder, nonadjustable in length, supported by attachments to a guide rail, which is generally fastened to shelving, the plane of the ladder being also its plane of motion.

(11) Wood characteristics. Wood characteristics are distinguishing features which by their extent and number determine the quality of a piece of wood.

(12) Wood irregularities. Wood irregularities are natural characteristics in or on wood that may lower its durability, strength, or utility.

(13) Cross grain. Cross grain (slope of grain) is a deviation of the fiber direction from a line parallel to the sides of the piece.

(14) Knot. A knot is a branch or limb, imbedded in the tree and cut through in the process of lumber manufacture, classified according to size, quality, and occurrence. The size of the knot is determined as the average diameter on the surface of the piece.

(15) Pitch and bark pockets. A pitch pocket is an opening extending parallel to the annual growth rings containing, or that has contained, pitch, either solid or liquid. A bark pocket is an opening between annual growth rings that contains bark.

(16) Shake. A shake is a separation along the grain, most of which occurs between the rings of annual growth.

(17) Check. A check is a lengthwise separation of the wood, most of which occurs across the rings of annual growth.

(18) Wane. Wane is bark, or the lack of wood from any cause, on the corner of a piece.

(19) Decay. Decay is disintegration of wood substance due to action of wood–destroying fungi. It is also known as dote and rot.

(20) Compression failure. A compression failure is a deformation (buckling) of the fibers due to excessive compression along the grain.

(21) Compression wood. Compression wood is an aberrant (abnormal) and highly variable type of wood structure occurring in softwood species. The wood commonly has density somewhat higher than does normal wood, but somewhat lower stiffness and tensile strength for its weight in addition to high longitudinal shrinkage.

(22) Low density. Low–density wood is that which is exceptionally light in weight and usually deficient in strength properties for the species.

[Order 73–5, § 296–24–780, filed 5/9/73 and Order 73–4, § 296–24–780, filed 5/7/73.]

WAC 296–24–78003 Application of requirements. This section is intended to prescribe rules and establish minimum requirements for the construction, care, and use of the common types of portable wood ladders, in order to insure safety under normal conditions of usage. Other types of special ladders, fruit–picker's ladders, industrial tripod ladders, combination step and extension ladders, stockroom step ladders, aisle–way step ladders, shelf ladders, and library ladders are not specifically covered by this section.

[Order 73–5, § 296–24–78003, filed 5/9/73 and Order 73–4, § 296–24–78003, filed 5/7/73.]

WAC 296–24–78005 Materials. (1) Requirements applicable to all wood parts.

(a) All wood parts shall be of the species specified in Table D–5, seasoned to a moisture content of not more than 15 percent; smoothly machined and dressed on all sides; free from sharp edges and splinters; sound and free by accepted visual inspection from shake, wane, compression failures, decay, or other irregularities except as hereinafter provided. Low–density wood shall not be used.

(b) Black streaks in western hemlock shall not be considered an irregularity, except that chambers associated with black streaks when present in the part, shall be limited as specified for pitch and bark pockets.

(2) Permissible irregularities in side rails and back rails.

(a) The general slope of grain in side rails of minimum dimension shall not be steeper than 1 in 12, except that for ladders under 10 feet in length and having flat steps for treads, the general slope of grain shall not be steeper than 1 in 10. The slope of grain in areas of local grain deviation shall not be steeper than 1 in 12 or 1 in 10 as specified above when occurring on the edges or in the outer one–fourth of the width of the wide face. Local areas of grain deviation within the center half of the width of the wide face may contain grain slope as steep as 1 in 8. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(b) Knots shall not appear in narrow faces of side rails. Knots, if tight and sound and less than one–half inch in diameter, are permitted on the wide face provided they are at least one–half inch back from either edge and not more frequent than 1 to any 3 feet of ladder length.

(c) Pitch and bark pockets are permitted provided they are not more than one–eighth inch in width, or more than 2 inches in length, or more than one–half inch in depth, and then only if they are not more frequent than 1 to any 3 feet of ladder length.

(d) Checks are permitted on side rails provided they are not more than 6 inches in length or more than one–half inch in depth.

(e) Occurrences of compression wood in relatively small amounts and positively identified by competent and conscientious visual inspection of side rails are permitted provided no single streak shall exceed one–half inch in width nor shall the aggregate of streaks exceed one–fourth of the face of the side rail. Borderline forms of compression wood not positively identified by competent and conscientious visual inspection are permitted. Ladder parts containing bow or crook which would interfere with the operation of the ladder shall not be used.

(3) Permissible irregularities in flat steps, rungs, and cleats.

(a) The general slope of grain in flat steps of minimum dimension shall not be steeper than 1 in 12, except that for ladders under 10 feet in length the slope of grain shall not be steeper than 1 in 10. The slope of grain in areas of local deviation shall not be steeper than 1 in 12 or 1 in 10 as specified above. For all ladders, cross grain not steeper than 1 in 10 are permitted in lieu of 1 in 12, provided the size is increased to afford at least 15 percent greater calculated strength than for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(b) The general slope of grain and that in areas of local deviations of grain shall not be steeper than 1 in 15 in rungs and cleats. For all ladders cross grain not steeper than 1 in 12 are permitted in lieu of 1 in 15, provided the size is increased to afford at least 15 percent greater calculated strength for ladders built to minimum dimensions. Local deviations of grain associated with otherwise permissible irregularities are permitted.

(c) Knots over one-eighth inch in diameter shall not appear in rungs. Knots shall not appear in the narrow faces of flat steps and cleats. Knots appearing in the wide faces of flat steps and cleats shall not exceed a diameter of one-fourth inch.

(4) Classification of species of wood. Table D-5 gives a list of native woods, divided into four groups on the basis of mechanical properties considered from the standpoint of use for ladder construction.

(a) All minimum dimensions and specifications set forth in (b)(ii) for side rails and flat steps are based on the species of wood listed in Group 3 in Table D-5 except where otherwise provided. The species of all other groups may be substituted for those of Group 3 when used in sizes that provide at least equivalent strength. (See Table D-5 for suggested methods of size adjustment.)

(b) All minimum dimensions and specifications set forth in the following "factor for increase in" for rungs and cleats are based on the species of wood listed in Group 1 in Table D-5. The cross-sectional dimensions specified for Group 1 species are increased by the factors shown in this subsection (based on the percentages of Table D-5) for the species group of which the cleats are to be made.

FACTOR FOR INCREASE IN

Species group	Each dimension	Width only (thickness unchanged)
1	1.00	1.00
2	1.03	1.05
3	1.11	1.19
4	1.17	1.26

(5) Metal parts. All metal parts shall be made of aluminum, steel, wrought iron, malleable iron, or other material, adequate in strength for the purpose intended, and shall be properly coated and protected so as to be rust resistant.

[Order 73-5, § 296-24-78005, filed 5/9/73 and Order 73-4, § 296-24-78005, filed 5/7/73.]

WAC 296-24-78007 Construction requirements. (1) Basis of requirements.

(a) Dimensions specified hereinafter for wood ladders are the minimum dressed cross-sectional dimensions for the types of ladders herein designated, based on the species of woods specified in WAC 296-24-78005(4), at a moisture content of 15 percent. The dimensions for side rails are based on a mortise or gain as specified for the various types of ladders for step or rung attachments. Where the strength of the side rails or back legs is reduced by a greater mortise or gain than shown, or where it is desired to use a cross section for any wood part either dimension of which is less than that specified, the required dimensions may be found as indicated in (1)(b) of this section.

(b) For the side rails of single extension and sectional ladders, the proposed section shall develop an actual stress per square inch not greater than 2,150 pounds for Group 1 woods, 2,000 pounds for Group 2 woods, 1,600 pounds for Group 3 woods, or 1,375 pounds for Group 4 woods when computed by the following formula applying to rectangular sections, with a maximum tolerance of 5 percent over these stresses:

$$S = \frac{3\ LD\ (P+W/16)}{2B\ (D^3-d^3)} = \frac{1.5\ LD\ (25+W/16)}{B\ (D^3-0.67)}$$

P = 25 pounds, which is the normal component on each rail of a load of 200 pounds at the center of the ladder, equally distributed between the rails, when the foot of the ladder is moved out of the perpendicular by one-quarter of its length.
S = Stress in extreme fiber in pounds per square inch.
W = Weight of ladder in pounds.
L = Maximum working length of ladder in inches.
B = Net thickness of each side rail in inches.
D = Depth of side rail in inches.
d = Diameter of hole board for rung (d^3 shall be taken as not less than 0.67).

(c) Adjustment of sizes for wood parts of stepladders and other ladder types covered by this section may be made as follows:

(i) The dimensions specified in later sections for parts having rectangular cross sections generally represent only one of a number of possible combinations of thickness and width which could satisfy the requirements for strength and stiffness. Depending upon the material sizes available, manufacturing practices, and like factors, parts produced by a particular manufacturer may or may not agree exactly with the sizes given later. The following provisions provide means for determining equality of load-carrying capacity of parts of different sizes or of determining sizes needed to provide equality.

(ii) Any changes in dimensions shall result in a change in the width-thickness ratio for side rails of back legs not greater than 25 percent from the ratio for a corresponding ladder as now covered in this section.

(iii) Where both dimensions are different from those specified, the load-carrying capacity in bending of a part will be equal to or greater than that of a part of specified dimensions if the ratio P_2/P_1 is not less than 1, where

$$\frac{P_2}{P_1} = \frac{B_2D_2^2}{B_1D_1^2}$$

and

B = Dimension of the part at right angles to the direction of load (width of a step, thickness of a side rail or back leg).

D = Dimension of the part parallel to the direction of load (thickness of a step, width of a side rail or back leg).

B_1D_1 = Dimensions as specified.

B_2D_2 = Dimensions of part being considered.

(iv) The dimensions to be used in the computations are net dimensions. For example, in the case of a stepladder side rail, the dimension B is to be taken as the gross thickness of the rail minus the depth of the gain for the steps. Where there is a rung hole at the center of depth of a rail, a somewhat more accurate comparison may be made by the use of the formula

$$\frac{P_2}{P_1} = \frac{B_2D_1\,(D_2^3-d^3)}{B_1D_2\,(D_1^3-d^3)}$$

where the symbols have the same meanings as before and d is the diameter of the hole for the rung tenon. In most instances the difference in results calculated by this and by the earlier formula will be slight.

(2) Portable stepladders. Stepladders longer than 20 feet shall not be supplied. Stepladders as hereinafter specified shall be of three types:

Type I—Industrial stepladder, 3 to 20 feet for heavy duty, such as utilities, contractors, and industrial use.

Type II—Commercial stepladder, 3 to 12 feet for medium duty, such as painters, offices, and light industrial use.

Type III—Household stepladder, 3 to 6 feet for light duty, such as light household use.

(a) General requirements.

(i) Slope is the inclination of side rails or back legs with respect to the vertical and is expressed as a deviation from the vertical per unit length of the member. Stepladders shall be so constructed, that when in the open position, the slope of the front section shall not be less than 3 1/2 inches and the slope of the back section not less than 2 inches, for each 12–inch length of side rail.

(ii) A uniform step spacing shall be employed which shall be not more than 12 inches. Steps shall be parallel and level when the ladder is in position for use.

(iii) The minimum width between side rails at the top, inside to inside, shall be not less than 11 1/2 inches. From top to bottom, the side rails shall spread at least 1 inch for each foot of length of stepladder.

(iv) When minimum thickness of side rails is used, steps shall be closely fitted into the grooves in the side rails one–eighth inch in depth with a tolerance of one thirty–second inch, and shall be firmly secured as hereinafter described; or they shall be closely fitted into metal brackets of an equivalent strength, which in turn shall be firmly secured to the side rails. The depth of groove herein provided may be increased in proportion to the thickness of side rails as provided in WAC 296–24–78007 (2)(b), (c) and (d).

(v) All stepladders shall have a top with wood or metal brackets or fittings tightly secured to the top, side rails, and back legs, to allow free swinging of the back section without excessive play or wear at the joints.

(vi) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in open positions shall be a component of each stepladder. The spreader shall have all sharp points covered or removed to protect the user. For Type III ladder, the pail shelf and spreader may be combined in one unit (the so–called shelf–lock ladder).

(vii) When measured along the front edge of the side rails, all stepladders shall measure within 3 inches of the specified length.

(viii) Where bucket shelves are provided, they shall be constructed to support a load of 25 pounds and shall be so fastened that they can be folded up when the ladder is closed.

(ix) All metal parts and fittings shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

(b) Type I industrial stepladder.

(i) The minimum dimensions of the parts of the Type I stepladder shall be as shown in Table D–2 when made of Group 2 or Group 3 woods.

(A) The minimum thickness of side rails provides for the cutting of a groove of one–eighth inch in depth with the tolerance indicated in WAC 296–24–78007 (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least two 6–d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerances, which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing—into the side rails, and a truss block which shall be fitted between the rod and the center of each step, or by a metal angle brace on each end firmly secured to the steps and side rails, or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails. In addition, all steps 3 5/8 inches wide and 27 inches or more in overall length and all steps 4 1/4 inches wide and 32 inches or more in overall length shall be provided with a metal angle brace at each end securely attached to the step and side rail.

(iii) The back section shall be braced by one of the following methods:

(A) The back legs shall be braced with 1 1/8–inch diameter rungs of Group 1 woods (see Table D–5), or material of equivalent strength, having 7/8–inch diameter tenons or oval wood rungs, or rectangular wood rungs of equivalent strength, spaced not more than 12 inches apart. The back legs shall be bored with holes either extending through the legs or to within three–sixteenths inch of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against

the leg, and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the rungs. The back legs shall be braced by a metal angle brace on each side, securely fastened to the rung and the back legs, one rung to be braced for each 4 feet of length or fraction thereof, on ladders 4 feet or more in length, with braces required only on the bottom rung for ladders that are 4 feet or shorter. Where rungs are more than 28 inches in length between the back legs they shall be provided with center bearing consisting of a wood bar not less than 3/4 by 2 inches in a cross–section securely nailed to each rung passing through it and long enough to include each rung longer than 28 inches.

(B) The back leg shall be braced with horizontal wood bars of Group 1, 2, or 3 woods in Table D–5 and not less than 3/4 by 2 1/2 inches in cross–section, spaced not more than 12 inches apart. The ends of the bars shall fit into metal sockets of not less than 20–gauge (manufacturers standard) steel, or other material of equivalent strength, or into mortises of not less than one–eighth inch (tolerance of ± one–thirty–second inch) in depth in the back legs. A steel rod not less than 3/16 inch in diameter with standard commercial tolerance shall pass through the back legs, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent passing into the back legs. The back legs shall also be braced by a metal angle brace on each side, securely fastened to the bar and to the legs, one bar to be so braced for at least each 4 feet of length or fraction thereof, with braces required only on bottom bar for ladders that are 4 feet or shorter. Metal sockets when used shall be attached to the back legs by rivets or by means of a rod running through the socket or equivalent thereof.

(iv) The back legs shall be reinforced by a rivet through the depth of the leg above the hinge point, by metal plates or collars at the hinge point, or by other means suitable for preventing splitting of the back leg from the hinge pin to the top.

(c) Type II commercial stepladder.

(i) The minimum dimensions of the parts of the Type II stepladder shall be as given in Table D–3 when made of Group 2 or Group 3 woods.

(A) The minimum thickness of side rails provides for the cutting of a groove of one–eighth inch in depth with the tolerance indicated in (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least two 6–d nails at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through metal washers of sufficient thickness and diameter on each end to prevent pressing into the side rails, and a truss block shall be fitted between the truss rod and center of each step; or by a metal angle brace on each end firmly secured to the steps and side rails; or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rails. In addition all steps 27 inches or more in overall length shall be provided with a metal angle brace at each end securely attached to the step and side rails.

(iii) The back legs shall be braced by one of the three following methods:

(A) With 7/8–inch diameter wood dowels of Group 1 woods (see Table D–5) or material of equivalent strength having not less than 5/8–inch tenons firmly secured in the back legs and spaced not more than 12 inches apart. The back legs shall be bored with holes either extending through the legs or to within three–sixteenths inch of the outside face of the legs, the size of the hole to be such as to insure a tight fit for the dowel. The shoulder of the dowel shall be forced firmly against the leg and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning of the dowel.

(aa) A bar connecting two or more of the dowels shall be provided on all ladders of 6 feet or more. The cross–sectional dimensions of the bar shall be the same as the cross–sectional dimensions of the back legs, and the dowels shall pass through holes at the centerline of the bar. The bar shall be attached at the center of the length of the lower two dowels on a 6–foot ladder and shall extend upward one dowel for each 2 feet of added length.

(B) With wood dowels as set forth in (2)(c)(iii)(A) of this section, plus an inverted V bracing of 3/4–inch by 1 1/2–inch material through which the dowels extend, the length of the V to extend two–thirds of the way up the back.

(C) With horizontal bracing of Group 1, 2, 3, or 4 woods (see Table D–5) not less than 3/4 by 2 inches in cross–section, the ends of which shall fit into metal sockets of not less than 20–gauge (manufacturing standard), steel, or other material of equivalent strength or into mortises not less than one–eighth inch in depth in back legs. The bars shall be reinforced by steel rods not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through the back legs, the bar, and, at each end, through metal washers of sufficient diameter and thickness to prevent pressing into the back legs. The spacing of such braces shall not exceed 3 feet, and there shall be one brace on 3– and 4–foot ladders, two braces on 5– and 6–foot ladders, three braces on 7– and 8–foot ladders, and four braces on 10– and 12–foot ladders. The bottom bar shall not be more than 18 inches from the bottom of the ladder, and, where only one bar is used, it shall be braced by a metal angle brace on each end securely attached to the bar and the back leg.

(d) Type III household stepladder.

(i) The minimum dimensions of the parts of the Type III stepladder shall be as follows when made of Group 2 or Group 3 woods.

	Length, 3 to 6 feet	
	Thickness (inch)	Depth (inches)
Side rails	3/4	2 1/2
Back legs	3/4	1 5/16
Steps	3/4	3
Top	3/4	5

The minimum thicknesses of side rails provide for the cutting of a groove one-eighth inch in depth with the tolerance indicated in WAC 296-24-78007 (2)(a)(iv), and shall be increased when grooves of greater depth are used.

(ii) Steps shall be secured with at least one 6-d nail at each end, or the equivalent thereof. Each step shall be reinforced by a steel rod not less than 3/16 inch in diameter with standard commercial tolerance which shall pass through metal washers of sufficient thickness and diameter to prevent pressing into the side rails, or by a metal brace at each end firmly secured to steps and side rails or by construction of equivalent strength and safety. Where the rod reinforcement construction is used, the bottom step shall be provided further with a metal angle brace on each end which shall be securely attached to the bottom step and side rail.

(iii) Back legs shall be braced by one of the two following methods or by construction of equivalent strength and safety:

(A) By diagonal slates of groups 1, 2, 3, or 4 wood (see Table D-5) not less than 5/16 by 1 1/4 inches securely fastened to the back legs by nails, screws, or the equivalent thereof.

(B) With horizontal bracing of Groups 1, 2, 3, or 4 wood (see Table D-5) not less than 5/8 by 1 5/8 inches in cross section, the ends of which shall fit into metal sockets of not less than 20-gauge (manufacturing standard) steel or other material of equivalent strength or into mortises not less than one-eighth inch in depth in back legs. The bars shall be reinforced by steel rods not less than 3/16 inch in diameter with standard commercial tolerances which shall pass through the back leg, the bar, and at each end through metal washers of sufficient diameter and thickness to prevent pressing into each leg. The spacing of such bars shall not exceed 3 feet, and there shall be one brace on 3- and 4-foot ladders, two braces on 5- and 6-foot ladders. The bottom bar shall be not more than 18 inches from the bottom of the ladder.

(3) Portable rung ladders. Portable rung ladders as herein specified shall be of four types, as follows: Single ladder; two-section extension ladder; section ladder; trestle and extension trestle ladder.

(a) General requirements.

(i) The base or lower portion of a ladder may have either parallel sides or flared sides in accordance with commercial practice.

(ii) Rungs shall be parallel, level, and uniformly spaced. The spacing shall be not more than 12 inches, except as hereinafter specified.

TABLE D-2

DIMENSIONS FOR TYPE I STEP LADDER

	Length, 12 feet and less		Length, 14 and 16 feet		Length, 18 and 20 feet	
	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)
Side rails	3/4	3 1/4	3/4	3 1/2	1 1/16	3 1/2
Back legs	3/4	2 1/4	3/4	2 5/8	1 1/16	2 1/4
Steps	3/4	3 5/8	3/4	4 1/4	3/4	4 1/4
Tops	3/4	5 1/2	3/4	5 1/2	3/4	5 1/2

TABLE D-3

DIMENSIONS FOR TYPE II STEP LADDER

	Length, 3 to 8 feet		Length, 10 feet		Length, 12 feet	
	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)	Thickness (inch)	Depth (inches)
Side rails	3/4	2 5/8	3/4	2 5/8	3/4	3
Back legs	3/4	1 5/8	3/4	1 3/4	3/4	2
Steps	3/4	3 1/2	3/4	3 1/2	3/4	3 5/8
Tops	3/4	5	3/4	5	3/4	5

(iii) All holes for wood rungs shall either extend through the side rails or be bored so as to give at least a thirteen-sixteenths-inch length of bearing to the rung tenon. In throughbored construction, the rungs shall extend at least flush with the outside rail surface. All holes shall be located on the center line of the wide face of the side rails and shall be of such size as to insure a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail or the equivalent thereof, for the sole purpose of preventing the turning of the rung and maintaining the rung position in the side rail. Ladders used with ladder jacks shall be a 3/16 inch metal tie rod immediately under each rung.

(iv) Round rungs shall be of Group 1 woods (see Table D-5), shall be not less than 1 1/8 inches in diameter for lengths over 36 inches between side rails and 1 1/4 inches in diameter for lengths over 36 up to and including 72 inches, and shall have not less than seven-eighths-inch-diameter tenons, or rungs of equivalent strength and bearing shall be provided. When rungs are 28 inches or more in length between side rails, they shall, in addition, be provided with center bearing.

(v) Oval rungs or rungs of any other cross section may be used provided they are secured by a nail at each end or the equivalent thereof, and have at least the same strength and bearing as round rungs of the same length.

(vi) All metal parts and fittings shall be securely attached by means of rivets, bolts, screws, or equivalent fasteners.

(vii) The construction and assembly of the movable parts shall be such that they shall operate freely and securely without binding or unnecessary play.

(viii) When measured along the side rails, no rung ladder or section thereof shall be more than 4 inches shorter than the specified length.

(ix) Nonslip bases shall be securely bolted, riveted, or attached by equivalent construction to the side rails.

(x) Hooks shall be securely bolted or riveted to the side rails or equivalent construction and shall be of such dimensions as to withstand the loads imposed upon them.

(b) Single ladder.

(i) Single ladders longer than 30 feet shall not be supplied.

(ii) The minimum dimensions of the side rails of the single ladder shall be as follows when made of Group 2 or Group 3 woods:

Length of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 16	1 1/8	2 1/2
Over 16 up to and including 22	1 1/4	2 3/4
Over 22 up to and including 30	1 1/4	3

(iii) Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in this WAC 296-24-78007 (3)(b)(ii).

(iv) The width between the side rails at the base, inside to inside, shall be at least 11 1/2 inches for all ladders up to and including 10 feet. Such minimum widths shall be increased at least one-fourth inch for each additional 2 feet of length.

(c) Two-section ladder.

(i) Two-section extension ladders longer than 60 feet shall not be supplied. All ladders of this type shall consist of two sections, one to fit within the side rails of the other, and arranged in such a manner that the upper section can be raised and lowered.

(ii) The minimum dimensions of the side rails of the two-section extension ladder shall be not less than specified in Table D-4.

(iii) The minimum dimensions of side rails set forth in Table D-4 are based on the maximum working length, which is the size of ladder less the minimum overlap, which shall be as follows:

Size of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(iv) Smaller side rails will be acceptable in all ladders of this type when reinforced by a steel wire, rod, or strap running the length of the side rails and adequately secured thereto. Where such reinforcement is used, the reinforced rails shall be equivalent in strength to the side rails specified in Table D-4.

(v) The minimum distance between side rails of the bottom section, inside to inside, shall be 14 1/2 inches on ladders up to and including 28 feet; 16 inches on all ladders over 28 feet up to and including 40 feet; 18 inches on all ladders over 40 feet.

(vi) Rungs. Rungs shall be of white oak, ash, hickory, or wood of equivalent strength not less than 1 1/8 inches in diameter with at least a 7/8 inch diameter tenon. Where the distance between side rails is more than 28 inches rungs shall be supported in the center. Holes for wood rungs shall either extend through the side rails or be bored to give at least a 13/16 inch length of bearing to the rung tenon. In throughbored construction the rungs shall extend at least flush with the outside rail surface. Holes shall be located on the center line of the wide face of the side rails and shall be of such size as to be a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning. A 3/16 inch diameter tie rod shall be placed under each rung.

(vii) All locks and guide irons shall be of metal and shall be of such construction and strength as to develop the full strength of the side rails. All locks shall be positive in their action. The guide irons shall be securely attached and so placed as to prevent the upper section from tipping or falling out while raising, lowering, or in use.

(viii) Ladders of this type may be equipped with a rope and pulley, which shall be securely attached to the ladder in such manner as not to weaken either the rungs or the side rails. The pulley shall be not less than 1 1/4 inches in diameter.

(A) The rope used with the pulley shall be not less than five-sixteenths inch in diameter having a minimum breaking strength of 560 pounds, and shall be sufficient length for the purpose intended.

(d) Sectional ladder.

(i) Assembled combinations of sectional ladders longer than lengths specified in (3)(d)(ii) shall not be used.

(ii) The minimum dimensions of side rails shall be as follows for Group 2 or Group 3 woods:

Assembled length of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 21	1 1/8	2 3/4
Over 21 up to and including 31	1 1/8	3 1/8

TABLE D-4

DIMENSIONS OF SIDE RAILS FOR TWO-SECTION LADDER

Size of ladder, overall length (feet)	Rail		
	Thickness (inches)		Depth (inches)
For group 2 woods			
16	1 1/16	X	2
20	1 1/16	X	2 1/4
24	1 1/16	X	2 1/2
28	1 1/16	X	2 3/4
32	1 1/8	X	2 3/4
36	1 5/16	X	2 3/4
40	1 5/16	X	2 3/4
44	1 5/16	X	3
For group 3 woods			
16	1 1/8	X	2
20	1 1/8	X	2 1/4
24	1 1/8	X	2 1/2
28	1 1/8	X	2 3/4
32	1 5/16	X	2 3/4
36	1 5/16	X	3
40	1 3/8	X	3
44	1 3/8	X	3 1/4
48-52	1 3/8	X	3 3/4
56-60	1 5/8	X	3 3/4

(iii) Ladders of this type shall have either straight sides slightly converging toward the top of each section, or shall have flaring sides at the bottom of the first (or bottom) section, with the top section having converging side rails to a width that shall be not less than 4 inches. Except for the top section, the minimum width between side rails shall be 11 inches.

(A) Adjacent sections shall be jointed by means of a groove in the bottom end of each rail of the upper of the two sections setting firmly over extensions outside the side rails, of the topmost rung of the next lower section and, at the same time, a groove in the top end of each rail of the lower of the two sections setting firmly over the bottom rung, inside the side rails, of the section next above.

(B) The distance between the two rungs (top-most rung of one section, bottom rung of the section next above) mentioned in WAC 296-24-78007 (3)(d)(iii)(A) shall not be less than 1 foot.

(C) The fit between rail grooves and rungs mentioned in WAC 296-24-78007 (3)(d)(iii)(A) shall be such as to provide a good fit without binding or unnecessary play.

(D) The grooved ends of the sections shall be reinforced with a metal plate of not less than 18-gauge (manufacturing standard) material properly secured thereto, and a rivet adjacent to the groove, extending through the depth of the rail, or the equivalent thereof.

(e) Trestle and extension trestle ladder.

(i) Trestle ladders, or extension sections or base sections of extension trestle ladders longer than 20 feet shall not be supplied.

(ii) The minimum dimensions of the side rails of the trestle ladder, or the base sections of the extension trestle ladder, shall be as follows for Group 2 or Group 3 woods.

Size of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 16	1 5/16	2 3/4
Over 16 up to and including 20	1 5/16	3

The minimum dimensions of the side rails of the extension section of the extension trestle ladder, which shall have parallel sides, shall be as follows for Group 2 or Group 3 woods.

Size of ladder (feet)	Thickness (inches)	Depth (inches)
Up to and including 12	1 5/16	2 1/4
Over 12 up to and including 16	1 5/16	2 1/2
Over 16 up to and including 20	1 5/16	2 3/4

(iii) Trestle ladders and base sections of extension trestle ladders shall be so spread that when in an open position the spread of the trestle at the bottom, inside to inside, shall be at least 5 1/2 inches per foot of the length of the ladder.

(iv) The width between the side rails at the base of the trestle ladder and the base sections of the extension trestle ladder shall be at least 21 inches for all ladders and sections up to and including 6 feet. Longer lengths shall be increased at least 1 inch for each additional foot of length. The width between the side rails of the extension sections of the trestle ladder shall be not less than 12 inches.

(v) The tops of the side rails of the trestle ladder and of the base section of the extension trestle ladder shall be beveled or equivalent construction, and shall be provided further with a metal hinge to prevent spreading.

(vi) A metal spreader or locking device to hold the front and back sections in an open position, and to hold the extension section securely in the elevated position, shall be a component of all extension trestle ladders and all trestle ladders over 12 feet in length.

(vii) Rungs shall be parallel and level. On the trestle ladder, or on the base sections of the extension trestle

ladder, rungs shall be spaced not less than 8 inches or more than 18 inches apart; on the extension section of the extension trestle ladder, rungs shall be spaced not less than 6 inches or more than 12 inches apart.

(viii) Rungs. Rungs shall be of white oak, ash, hickory, or wood of equivalent strength not less than 1 1/8 inches in diameter with at least a 7/8 inch diameter tenon. Where the distance between side rails is more than 28 inches rungs shall be supported in the center. Holes for wood rungs shall either extend through the side rails or be bored to give at least a 13/16 inch length of bearing to the rung tenon. In throughbored construction the rungs shall extend at least flush with the outside rail surface. Holes shall be located on the center line of the wide face of the side rails and shall be of such size as to be a tight fit for the rung. The shoulder of the rung shall be forced firmly against the side rails and the tenon secured in place with a nail, or the equivalent thereof, to prevent turning. A 3/16 inch diameter tie rod shall be placed under each rung.

(4) Special–purpose ladders. All special–purpose ladders shall comply with the appropriate requirements of WAC 296–24–78007 (1), (2) and (3), except as hereinafter modified in this subsection.

(a) Platform stepladder. A platform stepladder is a modification of a portable stepladder with a working platform provided near the top.

(i) Platform stepladders shall be made in accordance with the requirements of Type I stepladders or in accordance with the requirements for Type II stepladders.

(ii) The slope of the back section shall be such that a vertical from the back edge of the platform will strike the floor at a distance measured toward the front section of not less than 3 inches from the base of the back section.

(iii) The minimum width between side rails at the platform shall be not less than 15 inches.

(iv) The back legs and side rails shall extend at least 24 inches above the platform and shall be connected with a top member to form a three–sided rail, or equivalent construction shall be provided.

(v) Platforms shall be so constructed as to be capable of supporting a load of 200 pounds placed at any point on the platform.

(vi) A separate spreader may be omitted from platform ladders in which the height to the platform is 6 feet or less. If the spreader is omitted, the platform shall be so designed as to function as a spreader or locking device to hold the front and back sections securely in an open position, with the connection between side rails and back legs being through the metal parts of the platform. The wood parts of a combined wood and metal platform functioning as a spreader shall not be depended upon to contribute to the spreading or locking action.

(b) Painter's stepladder.

(i) Painter's stepladders longer than 12 feet shall not be supplied.

(ii) Painter's stepladders shall be made in accordance with the requirements of Type II stepladders except for the following:

(A) The top may be omitted.

(B) A rope spreader may be substituted for the metal spreader required in WAC 296–24–78007 (2)(a)(vi). The rope shall not be less than No. 6 sash cord or its equivalent.

(c) Mason's ladder. A mason's ladder is a special type of single ladder intended for use in heavy construction work.

(i) Mason's ladders longer than 40 feet shall not be supplied.

(ii) The minimum dimensions of the side rails when made of Group 2 or Group 3 woods and rungs (Group 1 woods) of the mason's ladder shall be as follows:

Length of ladder (feet)	Side rails		Diameter	
	Thickness (inches	Depth (inches)	Rung (inches)	Tenon (inches)
Up to and including 22 —	1 5/8	3 5/8	1 3/8	1
Over 22 up to and including 40 ———	1 5/8	4 1/2	1 3/8	1

(iii) The width between the side rails at the bottom rung, inside to inside, shall be not less than 12 inches for all ladders up to and including 10 feet. Such minimum widths shall be increased by at least one–fourth inch for each additional 2 feet of length.

(iv) Rungs shall be parallel and level and shall be spaced not less than 8 inches or more than 12 inches apart.

(5) Trolley and side–rolling ladders.

(a) Length. Trolley ladders and side–rolling ladders longer than 20 feet should not be supplied.

(b) Dimensions. The dimensions of the side rails shall not be less than the following for Group 2 or Group 3 woods.

Length of side rails (feet)	Thickness (inch)	Depth (inches)
Up to and including 10	3/4	3
Over 10 up to and including 20 ———	3/4	3 3/4

The minimum thicknesses of side rails provide for the cutting of a groove not over one–eighth inch in depth and shall be increased when grooves of greater depth are used. Flat steps shall have the following minimum dimensions for Group 2 or Group 3 woods.

Length of side rails (feet)	Thickness (inch)	Depth (inches)
Up to and including 16	3/4	3
Over 16 up to and including 20 ———	3/4	3 1/4
Over 20 up to and including 24 ———	3/4	3 1/2
Over 24 up to and including 28 ———	3/4	4

(c) Width. The width between the side rails, inside to inside, shall be at least 12 inches.

(d) Step attachment. Flat steps shall be inset in the side rails one–eighth inch and secured with at least two 6–d nails at each end or the equivalent thereof. They shall be reinforced with angle braces or a 3/16–inch steel rod.

(e) Locking device. Locking devices should be provided on all trolley ladders.

(f) Tracks.

(i) Tracks shall be wood, or metal (excluding cast iron), or a combination of these materials.

(ii) Tracks for the top end of ladders shall be fastened securely and shall be so constructed that the wheels will not jump the track. Tracks shall be so designed as to provide for all probable loads to which they will be subjected.

(iii) The supports shall be securely fastened by the lag screws, machine, hook, or toggle bolts, or their equivalent.

(iv) Track for side–rolling ladders shall be supported by metal or wood brackets securely screwed or bolted to shelving or other permanent structure at not over 3 feet.

(g) Wheel carriages.

(i) Wheel carriages shall be so designed as to provide for all loads to which they will be subjected. Two–point suspension should be used.

(ii) The wheel carriage for the top end of the ladder shall be securely fastened to the top of the ladder with metal brackets bolted either to the side rails or to the top step. When bolted to the top step, this step shall be secured to the side rails with metal braces in addition to those otherwise provided. The wheel carriage shall be so designed that a loose or broken wheel will not allow the ladder to drop or become detached from the track.

(iii) The wheel carriage for the bottom end of the ladder shall be securely fastened to the bottom of the ladder.

(iv) The wheels at the upper end of the ladder shall have minimum wheel base of 8 inches.

(v) When wheels are used at the bottom of the ladder, there shall be at least one wheel supporting each side rail.

(vi) Running gear for bottoms of both trolley and side–rolling ladders shall be so designed and constructed as to provide for any load to which they will be subjected.

[Order 73–5, § 296–24–78007, filed 5/9/73 and Order 73–4, § 296–24–78007, filed 5/7/73.]

WAC 296–24–78009 Care and use of ladders. (1) Care. To insure safety and serviceability the following precautions on the care of ladders shall be observed:

(a) Ladders shall be maintained in good condition at all times, the joint between the steps and side rails shall be tight, all hardware and fittings securely attached, and the moveable parts shall operate freely without binding or undue play.

(b) Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.

(c) Frayed or badly worn rope shall be replaced.

(d) Safety feet and other auxiliary equipment shall be kept in good condition to insure proper performance.

(e) Ladders should be stored in such a manner as to provide ease of access or inspection, and to prevent danger of accident when withdrawing a ladder for use.

(f) Wood ladders, when not in use, should be stored at a location where they will not be exposed to the elements, but where there is good ventilation. They shall not be stored near radiators, stoves, steam pipes, or other places subjected to excessive heat or dampness.

(g) Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and permanent set.

(h) Ladders carried on vehicles should be adequately supported to avoid sagging and securely fastened in position to minimize chafing and the effects of road shocks.

(i) Ladders should be kept coated with a suitable protective material. The painting of ladders is satisfactory providing the ladders are carefully inspected prior to painting by competent and experienced inspectors acting for, and responsible to, the purchaser, and providing the ladders are not for resale.

(j) Ladders shall be inspected frequently and those which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "dangerous, do not use."

(k) Rungs should be kept free of grease and oil.

(2) Use. The following safety precautions shall be observed in connection with the use of ladders:

(a) Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one–quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

(b) Ladders for which dimensions are specified should not be used by more than one man at a time nor with ladder jacks and scaffold planks where use by more than one man is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

(c) Portable ladders shall be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders shall be reasonably rigid and shall have ample strength to support the applied load.

(d) Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

(e) Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.

(f) To support the top of the ladder at a window opening, a board should be attached across the back of the ladder, extending across the window and providing firm support against the building walls or window frames.

(g) When ascending or descending, the user should face the ladder.

(h) Ladders with broken or missing steps, rungs, or cleats, broken side rails, or other faulty equipment shall not be used; improvised repairs shall not be made.

(i) Short ladders shall not be spliced together to provide long sections.

(j) Ladders made by fastening cleats across a single rail shall not be used.

(k) Ladders shall not be used as guys, braces, or skids, or for other than their intended purposes.

(l) Tops of the ordinary types of stepladders shall not be used as steps.

(m) On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36 up to and including 48	4
Over 48 up to and including 60	5

(n) Portable rung ladders with reinforced rails (see WAC 296-24-78007 (3)(iii) and (iv)) shall be used only with the metal reinforcement on the under side. Ladders of this type should be used with great care near electrical conductors, since the reinforcing itself is a good conductor.

(o) No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eave, gutter, or roof line.

(p) Adjustment of extension ladders should only be made by the user when standing at the base of the ladder, so that the user may observe when the locks are properly engaged. Adjustment of extension ladders from the top of the ladder (or any level over the locking device) is a dangerous practice and should not be attempted. Adjustment should not be made while the user is standing on the ladder.

(q) Middle and top sections of sectional or window cleaner's ladders should not be used for bottom section unless the user equips them with safety shoes.

(r) Extension ladders should always be erected so that the upper section is resting on the bottom section.

(s) The user should equip all portable rung ladders with nonslip bases when there is a hazard of slipping. Nonslip bases are not intended as a substitute for care in safety placing, lashing, or holding a ladder that is being used upon oily metal, concrete, or slippery surfaces.

(t) The bracing on the back legs of step ladders is designed solely for increasing stability and not for climbing.

(u) When service conditions warrant, hooks may be attached at or near the top of portable ladders to give added security.

(v) Stepladders shall not be used as single ladders.

(w) Separate ladders for ascending and descending shall be provided in building construction of more than 2 stories in height, or where traffic is heavy.

(x) Where one broad ladder is used, a center rail shall be provided, and each side plainly marked "up" and "down."

(y) Ladder rungs shall not be used to support more than 1 section of plank, and not more than 2 men shall work on such section of planking at one and the same time. When 2 men are working on the same section of plank, their work should be so arranged that their weight is equally distributed between 2 ladders as nearly as possible.

(z) When ladders are used of a length sufficient to possess a tendency to spring when weight is applied, they shall be provided with bracing to overcome same. This applies particularly to extension ladders.

(a1) Before climbing ladders, workmen shall see that their shoes are free and clean of greasy or slippery substances.

(b1) When working from a stepladder over 5 feet high a workman shall not stand on a step higher than the third step from the top of the stepladder.

(c1) Ladders shall not be placed or used in elevator shafts or hoistways except where used by workmen engaged in work within such shafts or hoistways, and then they shall be protected from objects falling from operations at higher elevations in or adjoining the shaft.

(d1) Workmen shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

(e1) Ladders shall pass the following test:

When tested as a simple beam with a support under each end and the center rung loaded with a 200 pound load, the ladder must support this load for 10 minutes without permanent set and without showing any sign of failure. The maximum deflection shall not be greater than shown in the enclosed table.

Lengths of extended ladder in feet	Distance of supports from ends, in inches	Total deflection, in inches
12	3	2 3/4
16	3	6 3/4
20	3	11 1/2
24	3	16 1/2
28	3	21 1/2
30	3	23 1/2
34	6	26
36	6	29
40	6	37
44	9	41

(f1) When working from a ladder over 25 feet from the ground or floor, the ladder shall be secured at both top and bottom.

(g1) No type of work shall be performed on a ladder over 25 feet from the ground or floor that requires the use of both hands to perform the work, unless a safety belt is worn and the safety lanyard is secured to the ladder.

(h1) Work such as sandblasting or spray painting, that requires wearing eye protection, respirators, and handling of pressure equipment, shall be limited to not over 30 feet from the ground or floor while working on a ladder.

TABLE D-5

CLASSIFICATION OF VARIOUS SPECIES OF WOOD ACCEPTABLE FOR USE IN LADDER

The species are listed alphabetically within each group. The position of any species within a group therefore bears no relation to its strength or acceptability.

Where ladders are desired for use under conditions favorable to decay, it is recommended that the heartwood of decay–resistant species be used, or that the wood be given a treatment with a wood preservative. The species having the most durable heartwood are marked with an asterisk (*), and these should be preferred where resistance to decay is required.

GROUP 1

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2,150 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 10 percent smaller for each cross–section dimension, or the thickness may remain unchanged, in which case the width may not be more than 15 percent smaller if used edgewise (as in a rail) or 25 percent smaller if used flatwise (as in a tread).

White ash	Fraxinus americana, pennsylvanica, quadrangulata
Beech	Fagus grandifolia
Birch	Betula lenta, alleghaniensis, nigra (2)
Rock elm	Ulmus themasii
Hickory	Carya ovata, laciniosa, tomentosa, glabra
Locust*	Robinia pseudoacacia, Gleditsia triacanthos
Hard maple	Acer nigrum, saccharum
Red maple	Acer rubrum (3)
Red oak	Quercus velutina, marilandica, kelloggii, falcata var. pagodaefolia, laurifolia, ellipsoidalis, rubra, nuttallii, palustris, coccinea, shumardii, falcata, laevis, phellos
White oak	Quercus arizonica, douglasii, macrocarpa, lobata, prinus, muehlenbergii, emoryi, gambelii, oblonifolia, virginiana, garryana, lyrata, stellata, michauxii, bicolor, alba
Pecan	Carya illinoensis, cordiformis, myristicaeformis (4), aquatica (4)
Persimmon	Diospryros virginiana

GROUP 2

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 2,000 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions may be not more than 7 1/2 percent smaller for each cross–section dimension, or the thickness may remain unchanged, in which case the width may be not more than 11 percent smaller if used edgewise (as in a rail) or 20 percent smaller if used flatwise (as in a tread).

Douglas fir (coast region)	Pseudotsuga menziesii
Western larch	Larix occidentalis
Southern yellow pine	Pinus taeda, palustris, echinata, elliotii, rigida, virginiana

GROUP 3

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1,600 pounds per square inch.

Red alder	Alnus ruba, rhombifolia (2)
Oregon ash	Fraxinus latifolia
Pumpkin ash	Fraxinus profunda
Alaska cedar*	Chamaecyparis nootkatensis
Port Orford cedar*	Chamaecyparis lawsoniana
Cucumber	Magnolia acuminata
Cypress*	Taxodium distichum
Soft elm	Ulmus americana, rubra
Douglas fir (Rocky Mountain type)	Pseudotsuga menziesii var. glauca
Noble fir	Abies procera
Gum	Liquidambar styraciflua
West coast hemlock	Tsuga heterophylla
Magnolia	Magnolia grandiflora
Oregon maple	Acer macrophyllum
Norway pine	Pinus resinosa
Poplar	Liriodendron tulipifera
Redwood*	Sequoia sempervirens
Eastern spruce	Picea glauca, rubens
Sitka spruce	Picea sitchensis
Sycamore	Platanus occidentalis
Tamarack	Larix laricina
Tupelo	Nyssa aquatica, sylvatica

GROUP 4

The allowable fiber stress in bending for the species listed herein when used for side rails shall not exceed 1,375 pounds per square inch. These species may be substituted for Group 3 woods on the following basis: The dimensions shall be at least 5 percent greater for each cross–section dimension, or the thickness may remain unchanged, in which case the width shall be at least 7 1/2 percent greater if used edgewise (as in a rail) or 15 percent greater if used flatwise (as in a tread).

Aspen	Populus tremuloides, grandidentata
Basswood	Tilia americana, heterophylla (2)
Buckeye	Aesculus octandra, glabra (2)
Butternut	Juglanscinerea
Incense cedar*	Libocedrus decurrens
Western red cedar*	Thuja plicata
Cottonwood	Populus balsamifera, deltiodes, sargentii, heterophylla
White fir	Abies concolor, grandis, amabilis, lasiocarpa, magnifica
Hackberry	Celtis occidentalis, laevigata (2)
Eastern hemlock	Tsuga canadensis
Holly	Ilex opaca
Soft maple	Acer saccharinum
Lodgepole pine	Pinus contorta
Idaho white pine	Pinus monticola
Northern white pine	Pinus strobus
Ponderosa pine	Pinus ponderosa, pinus jeffreyi (Jeffrey pine)
Sugar pine	Pinus lambertiana
Engelmann spruce	Picea engelmannii

Note 1: The common and scientific names of species used conform to the American Lumber Standards nomenclature and in most cases to U.S. Department of Agriculture Handbook No. 41, "Check List of Native and Naturalized Trees of the United States (including Alaska)," by Elbert L. Little. These publications can be obtained from the Superintendent of Documents, Washington D.C. 20225.

Note 2: This species is commonly associated with others of the same genus under American Lumber Standards nomenclature, but no strength tests have been made on it at the Forest Products Laboratory.

Note 3: Included under soft maple in American Lumber Standards nomenclature.

Note 4: This species is not included under this common name in American Lumber Standards nomenclature, but strength data are available and it is accordingly included in this classification.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-78009, filed 7/31/79; Order 76-6, § 296-24-78009, filed 3/1/76; Order 73-5, § 296-24-78009, filed 5/9/73 and Order 73-4, § 296-24-78009, filed 5/7/73.]

WAC 296-24-795 Portable metal ladders.

[Order 73-5, § 296-24-795, filed 5/9/73 and Order 73-4, § 296-24-795, filed 5/7/73.]

WAC 296-24-79501 Terms. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-79503 through 296-24-79507 unless the context requires otherwise.

(1) Ladder. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Step ladder. A step ladder is a self-supporting portable ladder, nonadjustable in length, having flat steps and a hinged back. Its size is designated by the overall length of the ladder measured along the front edge of the side rails.

(3) Single ladder. A single ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of but one section. Its size is designated by the overall length of the side rail.

(4) Extension ladder. An extension ladder is a nonself-supporting portable ladder adjustable in length. It consists of two or more sections traveling in guides or brackets so arranged as to permit length adjustment. Its size is designated by the sum of the lengths of the sections measured along the side rails.

(5) Platform ladder. A self-supporting ladder of fixed size with a platform provided at the working level. The size is determined by the distance along the front rail from the platform to the base of the ladder.

(6) Sectional ladder. A sectional ladder is a nonself-supporting portable ladder, nonadjustable in length, consisting of two or more sections so constructed that the sections may be combined to function as a single ladder. Its size is designated by the overall length of the assembled sections.

(7) Trestle ladder. A trestle ladder is a self-supporting portable ladder, nonadjustable in length, consisting of two sections, hinged at the top to form equal angles with the base. The size is designated by the length of the side rails measured along the front edge.

(8) Extension trestle ladder. An extension trestle ladder is a self-supporting portable ladder, adjustable in length, consisting of a trestle ladder base and a vertically adjustable single ladder, with suitable means for locking the ladders together. The size is designated by the length of the trestle ladder base.

(9) Special-purpose ladder. A special-purpose ladder is a portable ladder which represents either a modification or a combination of design or construction features in one of the general-purpose types of ladders previously defined, in order to adapt the ladder to special or specific uses.

[Order 73-5, § 296-24-79501, filed 5/9/73 and Order 73-4, § 296-24-79501, filed 5/7/73.]

WAC 296-24-79503 Requirements. (1) General. Specific design and construction requirements are not part of this section because of the wide variety of metals and design possibilities. However, the design shall be such as to produce a ladder without structural defects or accident hazards such as sharp edges, burrs, etc. The metal selected shall be of sufficient strength to meet the test requirements, and shall be protected against corrosion unless inherently corrosion-resistant.

(a) Because of the varied conditions, and the wide variety of ladder uses, ladders may be designed with parallel side rails, with side rails varying uniformly in separation along the length (tapered), or with side rails flaring at the base to increase stability.

(b) The design of the side rails shall be such as to insure a product which will conform to the requirements of this section.

(c) The spacing of rungs or steps shall be on 12-inch centers.

(d) Rungs or steps to side rail connections should be so constructed as to insure rigidity as well as strength.

(e) Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping.

(f) Hardware shall meet strength requirements of the ladder's component parts, and shall be of a material that is protected against corrosion unless inherently corrosion-resistant. Metals shall be so selected as to avoid excessive galvanic action.

(2) General specifications—Straight and extension ladders.

(a) The minimum width between side rails of a straight ladder or any section of an extension ladder shall be 12 inches.

(b) The length of single ladders or individual sections of ladders shall not exceed 30 feet. Two-section ladders shall not exceed 48 feet in length and over two-section ladders shall not exceed 60 feet in length.

(c) Based on the nominal length of the ladder, each section of a multisection ladder shall overlap the adjacent section by at least the number of feet stated in the following:

Nominal length of ladder (feet):	Overlap (feet)
Up to and including 36	3
Over 36, up to and including 48	4
Over 48, up to 60	5

(d) Extension ladders shall be equipped with positive stops which will insure the overlap specified in the table above.

(e) Extension ladders may be equipped with a rope and pulley which shall be securely attached to the ladder in such a manner as not to weaken either the rungs or

the side rails. The pulley shall be not less than 1 1/4 inches in diameter.

(i) The rope used with the pulley shall be not less than five–sixteenths inch in diameter, having a minimum breaking strength of 560 pounds, and shall be of sufficient length for the purpose intended.

(3) General specifications—Step ladders.

(a) Step ladders shall be designed and constructed to give a minimum slope of 3 1/2 inches per foot of length of the front section, and a minimum slope of 2 inches per foot of length of the back section, except that special ladders designed for straight–in–wall work shall maintain at least 1 1/4–inch back slope per foot of length.

(b) The minimum width between the side rails at the top step shall be 12 inches. The width spread of the side rails shall increase a minimum of 1 inch per foot of length. The width of the step or tread shall not be less than 3 inches.

(c) The length of a stepladder is measured by the length of the front rail. To be classified as a standard length ladder, the measured length shall be within plus or minus one–half inch of the specified length. Stepladders shall not exceed 20 feet in length.

(d) The pail shelf shall be designed to fold completely within the ladder.

(e) The back section may be designed with either rungs or cross bracing as long as it meets the general and testing requirements.

(f) Steps shall be corrugated, knurled, dimpled, coated with skid–resistant materials, or otherwise treated to minimize the possibility of slipping.

(g) The bottoms of the four rails are to be supplied with insulating nonslip material.

(h) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each stepladder. The spreader shall have all sharp points or edges covered or removed.

(4) General specifications—Trestles and extension trestle ladders.

(a) Trestle ladders or extension sections or base sections of extension trestle ladders shall be not more than 20 feet in length.

(b) The minimum distance between side rails of the trestle or extension section at the narrowest point shall not be less than 12 1/2 inches. The width spread shall not be less than 1 inch per foot of length of side rail.

(c) Spread of base when section is open shall not be less than 5 1/2 inches per foot of base section side rail.

(d) The extension locking device shall be designed to withstand all load tests.

(e) A metal spreader or locking device of sufficient size and strength to securely hold the front and back sections in the open position shall be a component of each trestle ladder. The spreader shall have all sharp points or edges covered or removed.

(5) General specifications—Platform ladders.

(a) The length of a platform ladder shall not exceed 20 feet. The length of a platform ladder shall be measured along the front rail from the floor to the platform.

(b) Minimum width between side rails at platform level shall be 14 inches. Width spread shall not be less than 1 inch per foot of rise.

(c) Slope of the front rail when unit is in open position shall not be less than 3 1/2 inches per foot of rise, and the back section shall have a minimum slope of 1 inch per foot of rise.

(d) The platform shall be at least 20 inches from the top of the ladder, and shall have an area of not less than 200 square inches nor more than 400 square inches.

(e) The back legs and side rails of a platform ladder shall extend at least 20 inches above the platform and shall be connected with the top member to form a three–sided top guard rail, or equivalent construction shall be provided.

(f) Spreaders shall be provided where the hinging apparatus is not designed to lock the unit open.

[Order 73–5, § 296–24–79503, filed 5/9/73 and Order 73–4, § 296–24–79503, filed 5/7/73.]

WAC 296–24–79505 Testing. (1) General. The following tests are intended to insure uniform testing methods for metal ladders.

(2) Straight and extension ladders.

(a) Ladder inclined strength is measured by placing the ladder unit in a flat, horizontal position, supported 6 inches from the ends of the side rails. When testing extensions, the unit is opened to the required overlap. A load of 200 pounds is applied equally to the side rails at the center of the unit by means of a beam. The ladder must withstand this test with no permanent deformation or other visible weakening of the structure. This test is based on a 200–pound man using the ladder, set at 75 1/2° to the ground. With the man on the center rung, the component of his 200–pound weight at right angles to the ladder will be 50 pounds. Applying the load factor of 4, the test weight becomes 200 pounds.

(b) Test unit need only be of sufficient length for test purposes and is to consist of the base and fly sections of an extension ladder with all the hardware or fittings attached. The ladder unit is placed in a vertical position and a downward load of 775 pounds equally distributed on the ends of the side rails of the upper portion of the test unit. The unit shall withstand this test with no permanent deformation or other visible weakening of the structure.

(c) A test unit of at least three rungs is to be used from the maximum width portion of the ladder. A load of 800 pounds shall be applied to a 3 1/2–inch wide block resting on the center of the widest rung. A rung of 14 inches or less in length shall withstand this test with no permanent deformation or other visible weakening of the structure. A rung of more than 14 inches in length may have a permanent deflection of not more than one–eighth inch provided the rung cross section is not deformed and there is no other visible weakening of the structure.

(d) With at least a three–rung test unit set in a vertical position, a load of 800 pounds shall be applied to a 3 1/2–inch wide block resting on the center rung as near to the side rail as possible. On removing the load, the

unit must show no indication of failure in the fasteners attaching the rungs to the side rail.

(e) The rung shall be so secured to the side rail that a torque load of 360 inch–pounds applied to the rung at a side rail shall cause no visible relative motion between the rung and the side rail.

(f) With the ladder extended to its maximum working length, and resting horizontally on level supports located 6 inches from each end of the ladder, a weight of 50 pounds shall be suspended from one of the side rails midway between supports.

The deflection of the loaded rail, and the difference in deflection between the loaded and unloaded rails shall not exceed the values in Table D–6.

(g) Deflections in Table D–6 are to be determined by measuring, at the midpoint between supports, the distance from the outside edges of both rails to the floor or other reference surface both before and after the test load of 50 pounds is applied to one rail of the ladder. The test is to be repeated loading the other rail of the ladder. The angle (a) between the loaded and unloaded rails and the horizontal is to be calculated from the trigonometric equation:

$$\text{Sine } a = \frac{\text{Difference in deflection}}{\text{Ladder width}}$$

TABLE D–6

TABLE OF DEFLECTIONS

Length of ladder in feet	Maximum deflection of loaded rail in inches	Maximum difference in deflection between loaded and unloaded rails in degrees from horizontal
20	3.0	3.6
24	3.8	4.7
28	4.6	5.4
32	5.5	5.7
36	6.4	6.1
40	7.2	6.5
44	8.0	6.5
48	8.8	6.5

(3) Step, trestle, extension trestle, and platform ladders.

(a) Load test of the entire ladder is made with the ladder in an open position, and an 800–pound load applied to the center of the top. Resistance to side rail bending is tested by placing an 800–pound load on the center of the middle step. The strength of the step section is tested by applying an 800–pound load to a 3 1/2–inch–wide block resting on the center of the longest or bottom step. The pail shelf shall be so constructed as to support a distributed load of 50 pounds.

(i) In each test case, the unit must withstand the load without failure or permanent deformation.

(b) Set ladder in open position on a level floor. Place a 200–pound distributed load on the top step. The ladder is then subjected to a horizontal pulling load, applied at the top step, of 12–pound force to the side; 58–pound force to the front; 33–pound force to the back. In each test, all side rails must remain on the floor.

[Order 73-5, § 296-24-79505, filed 5/9/73 and Order 73-4, § 296-24-79505, filed 5/7/73.]

WAC 296-24-79507 Care and maintenance and use of ladders. (1) General. To get maximum serviceability, safety, and to eliminate unnecessary damage of equipment, good safe practices in the use and care of ladder equipment shall be employed by the users.

The following rules and regulations are essential to the life of the equipment and the safety of the user.

(2) Care of ladders.

(a) Ladders, shall be handled with care and not subject to unnecessary dropping, jarring, or misuse. (They are designed for a specific purpose or use; therefore, any variation from this use constitutes a mishandling of the equipment.)

(b) Ladders shall be stored on racks designed to protect the ladder when not in use. The racks shall have sufficient supporting points to prevent any possibility of excessive sagging.

(c) Ladders transported on vehicles shall be properly supported. Supporting points shall be of a softer material, such as hardwood or rubber–covered iron pipe, to minimize the chafing and effects of road shock. (Tying the ladder to each support point will greatly reduce damage due to road shock.)

(d) Ladders shall be maintained in good usable condition at all times. Hardware fittings and accessories shall be checked frequently and kept in good working condition.

(e) Ropes or cables shall be inspected frequently and replaced if defective.

(f) Complete ladder inspection shall be periodical. If a ladder is involved in any of the following, immediate inspection is necessary:

(i) If ladders tip over, inspect ladder for side rails dents or bends, or excessively dented rungs; check all rung–to–side–rail connections; check hardware connections; check rivets for shear.

(ii) If ladders are exposed to excessive heat as in the case of fire, the ladder should be inspected visually for damage and tested for deflection and strength characteristics. In doubtful cases, refer to manufacturer.

(iii) If ladders are to be subjected to certain acids or alkali solutions, a protective coating such as asphalt and varnish should be applied to the equipment.

(iv) If ladders are exposed to oil and grease, equipment should be cleaned of oil, grease, or slippery materials. This can easily be done with a solvent or steam cleaning.

(g) Ladders having defects are to be marked and taken out of service until repaired by either maintenance department or the manufacturer.

(3) Use of ladders.

(a) Portable nonself-supporting ladders shall be erected at a pitch of 75 1/2 degrees for maximum balance and strength. (A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.)

Note: Portable ladders are designed as a one-man working ladder based on a 200-pound load.

(b) Workmen shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

(c) The ladder base section must be placed with a secure footing. Safety shoes of good substantial design should be installed on all ladders. Where ladders with no safety shoes or spikes are used on hard, slick surfaces, a foot-ladder board should be employed.

(d) The top of the ladder must be placed with the two rails supported, unless equipped with a single support attachment. Such an attachment should be substantial and large enough to support the ladder under load.

(e) When ascending or descending, the climber must face the ladder.

(f) Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.

(g) Ladders should not be used as a brace, skid, guy or gin pole, gangway, or for other uses than that for which they were intended, unless specifically recommended for use by the manufacturer.

(h) Users are cautioned to take proper safety measures when metal ladders are used in areas containing electric circuits to prevent short circuits or electrical shock. The ordinary precautions should be employed as would be used when using any other metal tool.

[Order 76-6, § 296-24-79507, filed 3/1/76; Order 73-5, § 296-24-79507, filed 5/9/73 and Order 73-4, § 296-24-79507, filed 5/7/73.]

WAC 296-24-810 Fixed ladders.

[Order 73-5, § 296-24-810, filed 5/9/73 and Order 73-4, § 296-24-810, filed 5/7/73.]

WAC 296-24-81001 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-81003 through 296-24-81007 unless the context requires otherwise.

(1) Ladder. A ladder is an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps, rungs, or cleats, on which a person may step in ascending or descending.

(2) Fixed ladder. A fixed ladder is a ladder permanently attached to a structure, building, or equipment.

(3) Individual-rung ladder. An individual-rung ladder is a fixed ladder each rung of which is individually attached to a structure, building, or equipment.

(4) Rail ladder. A rail ladder is a fixed ladder consisting of side rails joined at regular intervals by rungs or cleats and fastened in full length or in sections to a building, structure, or equipment.

(5) Railings. A railing is any one or a combination of those railings constructed in accordance with WAC 296-24-75003 through 296-24-75011. A standard railing is a vertical barrier erected along exposed edges of floor openings, wall openings, ramps, platforms, and runways to prevent falls of persons.

(6) Pitch. Pitch is the included angle between the horizontal and the ladder, measured on the opposite side of the ladder from the climbing side.

(7) Fastenings. A fastening is a device to attach a ladder to a structure, building, or equipment.

(8) Rungs. Rungs are ladder crosspieces of circular or oval cross-section on which a person may step in ascending or descending.

(9) Cleats. Cleats are ladder crosspieces of rectangular cross-section placed on edge on which a person may step in ascending or descending.

(10) Steps. Steps are the flat crosspieces of a ladder on which a person may step in ascending or descending.

(11) Cage. A cage is a guard that may be referred to as a cage or basket guard which is an enclosure that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder.

(12) Well. A well is a permanent complete enclosure around a fixed ladder, which is attached to the walls of the well. Proper clearances for a well will give the person who must climb the ladder the same protection as a cage.

(13) Ladder safety device. A ladder safety device is any device, other than a cage or well, designed to eliminate or reduce the possibility of accidental falls and which may incorporate such features as life belts, friction brakes, and sliding attachments.

(14) Grab bars. Grab bars are individual handholds placed adjacent to or as an extension above ladders for the purpose of providing access beyond the limits of the ladder.

(15) Through ladder. A through ladder is one from which a man getting off at the top must step through the ladder in order to reach the landing.

(16) Side-step ladder. A side-step ladder is one from which a man getting off at the top must step sideways from the ladder in order to reach the landing.

[Order 73-5, § 296-24-81001, filed 5/9/73 and Order 73-4, § 296-24-81001, filed 5/7/73.]

WAC 296-24-81003 Design requirements. (1) Design considerations. All ladders, appurtenances, and fastenings shall be designed to meet the following load requirements:

(a) The minimum design live load shall be a single concentrated load of 200 pounds.

(b) The number and position of additional concentrated live-load units of 200 pounds each as determined from anticipated usage of the ladder shall be considered in the design.

(c) The live loads imposed by persons occupying the ladder shall be considered to be concentrated at such points as will cause the maximum stress in the structural member being considered.

(d) The weight of the ladder and attached appurtenances together with the live load shall be considered in the design of rails and fastenings.

(2) Design stresses. Design stresses for wood components of ladders shall not exceed those specified in WAC 296-24-78001 through 296-24-79507. All wood parts of fixed ladders shall meet the requirements of WAC 296-24-78005.

For fixed ladders consisting of wood side rails and wood rungs or cleats, used at a pitch in the range 75 degrees to 90 degrees, and intended for use by no more than one person per section, single ladders as described in WAC 296-24-78007 (3)(b) are acceptable.

[Order 73-5, § 296-24-81003, filed 5/9/73 and Order 73-4, § 296-24-81003, filed 5/7/73.]

WAC 296-24-81005 Specific features. (1) Rungs and cleats.

(a) All rungs shall have a minimum diameter of three-fourths inch for metal ladders, except as covered in subsection (7)(a) of this section, and a minimum diameter of 1 1/8 inches for wood ladders.

(b) The distance between rungs, cleats, and steps shall not exceed 12 inches and shall be uniform throughout the length of the ladder.

(c) The minimum clear length of rungs or cleats shall be 16 inches.

(d) Rungs, cleats, and steps shall be free of splinters, sharp edges, burrs, or projections which may be a hazard.

(e) The rungs of an individual-rung ladder shall be so designed that the foot cannot slide off the end. (A suggested design is shown in Figure D-1, at the end of this section.)

(2) Side rails. Side rails which might be used as a climbing aid shall be of such cross sections as to afford adequate gripping surface without sharp edges, splinters, or burrs.

(3) Fastenings. Fastenings shall be an integral part of fixed ladder design.

(4) Splices. All splices made by whatever means shall meet design requirements as noted in WAC 296-24-81003(1). All splices and connections shall have smooth transition with original members and with no sharp or extensive projections.

(a) When fixed ladders are spliced the splice plates shall be the same depth as side rails.

(b) The length of the splice plates shall be four times the depth of the side rail. They shall be of metal not less than one-fourth of an inch in thickness and chamfered on all exposed edges.

(c) Splice plates shall be secured by bolts or rivets with the heads countersunk or of the button type.

(d) The heads shall be on the outside of the rail.

(e) The bolts or rivets shall be not less than one-half inch nor more than five-eighths inch in diameter.

(f) The bolt ends shall be chamfered with only the chamfered end extending beyond the nut.

(g) Both ends of the rivet shall be button shape.

(h) Washers shall be placed under the nuts and rivet ends on wood side rails.

(i) There shall be a minimum of three bolts or rivets on each side of the joint for metal side rails and a minimum of four bolts or rivets for wood side rails.

(j) Bolts and rivets in both metal and wood side rails shall be staggered in position.

(5) Electrolytic action. Adequate means shall be employed to protect disimilar metals from electrolytic action when such metals are joined.

(6) Welding. All welding shall be in accordance with the "Code for Welding in Building Construction" (AWS D1.0-1966).

(7) Protection from deterioration.

(a) Metal ladders and appurtenances shall be painted or otherwise treated to resist corrosion and rusting when location demands. Ladders formed by individual metal rungs imbedded in concrete, which serve as access to pits and to other areas under floors, are frequently located in an atmosphere that causes corrosion and rusting. To increase rung life in such atmosphere, individual metal rungs shall have a minimum diameter of 1 inch or shall be painted or otherwise treated to resist corrosion and rusting.

(b) Wood ladders, when used under conditions where decay may occur, shall be treated with a nonirritating preservative, and the details shall be such as to prevent or minimize the accumulation of water on wood parts.

(c) When different types of materials are used in the construction of a ladder, the materials used shall be so treated as to have no deleterious effect one upon the other.

[Order 73-5, § 296-24-81005, filed 5/9/73 and Order 73-4, § 296-24-81005, filed 5/7/73.]

WAC 296-24-81007 Clearance. (1) Climbing side. On fixed ladders, the perpendicular distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be 36 inches for a pitch of 76 degrees, and 30 inches for a pitch of 90 degrees (Fig. D-2 of this section), with minimum clearances for intermediate pitches varying between these two limits in proportion to the slope, except as provided in (3) and (5) of this section.

(2) Ladders without cages or wells. A clear width of at least 15 inches shall be provided each way from the centerline of the ladder in the climbing space, except when cages or wells are necessary.

(3) Ladders with cages or baskets. Ladders equipped with cage or basket are excepted from the provisions of (1) and (2) of this section, but shall conform to the provisions of WAC 296-24-81009 (1)(e). Fixed ladders in smooth-walled wells are excepted from the provisions of (1) of this section, but shall conform to the provisions of WAC 296-24-81009 (1)(f).

(4) Clearance in back of ladder. The distance from the centerline of rungs, cleats, or steps to the nearest permanent object in back of the ladder shall be not less than 7 inches, except that when unavoidable obstructions are encountered, minimum clearances as shown in Figure D-3 shall be provided.

(5) Clearance in back of grab bar. The distance from the centerline of the grab bar to the nearest permanent

object in back of the grab bars shall be not less than 4 inches. Grab bars shall not protrude on the climbing side beyond the rungs of the ladder which they serve.

(6) Step–across distance. The step–across distance from the nearest edge of ladder to the nearest edge of equipment or structure shall be not more than 12 inches, or less than 2 1/2 inches (Fig. D–4).

(7) Hatch cover. Counterweighted hatch covers shall open a minimum of 60 degrees from the horizontal. The distance from the centerline of rungs or cleats to the edge of the hatch opening on the climbing side shall be not less than 24 inches for offset wells or 30 inches for straight wells. There shall be no protruding potential hazards within 24 inches of the centerline of rungs or cleats; any such hazards within 30 inches of the centerline of the rungs or cleats shall be fitted with deflector plates placed at an angle of 60 degrees from the horizontal as indicated in Figure D–5. The relationship of a fixed ladder to an acceptable counterweighted hatch cover is illustrated in Figure D–6.

[Order 73–5, § 296–24–81007, filed 5/9/73 and Order 73–4, § 296–24–81007, filed 5/7/73.]

WAC 296–24–81009 Special requirements. (1) Cages or wells.

(a) Cages or wells (except on chimney ladders) shall be built, as shown on the applicable drawings, covered in detail in Figures D–7, D–8, and D–9, or of equivalent construction.

(b) Cages or wells (except as provided in (5) of this section) conforming to the dimensions shown in Figures D–7, D–8, and D–9 shall be provided on ladders of more than 20 feet to a maximum unbroken length of 30 feet.

(c) Cages shall extend a minimum of 42 inches above the top of landing, unless other acceptable protection is provided.

(d) Cages shall extend down the ladder to a point not less than 7 feet nor more than 8 feet above the base of the ladder, with bottom flared not less than 4 inches, or portion of cage opposite ladder shall be carried to the base.

(e) Cages shall not extend less than 27 nor more than 28 inches from the centerline of the rungs of the ladder. Cage shall not be less than 27 inches in width. The inside shall be clear of projections. Vertical bars shall be located at a maximum spacing of 40 degrees around the circumference of the cage; this will give a maximum spacing of approximately 9 1/2 inches, center to center.

(f) Ladder wells shall have a clear width of at least 15 inches measured each way from the centerline of the ladder. Smooth–walled wells shall be a minimum of 27 inches from the centerline of rungs to the well wall on the climbing side of the ladder. Where other obstructions on the climbing side of the ladder exist, there shall be a minimum of 30 inches from the centerline of the rungs.

(2) Landing platforms. When ladders are used to ascend to heights exceeding 20 feet (except on chimneys), landing platforms shall be provided for each 30 feet of height or fraction thereof, except that, where no cage, well, or ladder safety device is provided, landing platforms shall be provided for each 20 feet of height or fraction thereof. Each ladder section shall be offset from adjacent sections. Where installation conditions (even for a short, unbroken length) require that adjacent sections be offset, landing platforms shall be provided at each offset.

(a) Where a man has to step a distance greater than 12 inches from the centerline of the rung of a ladder to the nearest edge of structure or equipment, a landing platform shall be provided. The minimum step–across distance shall be 2 1/2 inches.

(b) All landing platforms shall be equipped with standard railings and toeboards, so arranged as to give safe access to the ladder. Platforms shall be not less than 24 inches in width and 30 inches in length.

(c) One rung of any section of ladder shall be located at the level of the landing laterally served by the ladder. Where access to the landing is through the ladder, the same rung spacing as used on the ladder shall be used from the landing platform to the first rung below the landing.

(3) Ladder extensions. The side rails of through or side–step ladder extensions shall extend 3 1/2 feet above parapets and landings. For through ladder extensions, the rungs shall be omitted from the extension and shall have not less than 18 nor more than 24 inches clearance between rails. For side–step or offset fixed ladder sections, at landings, the side rails and rungs shall be carried to the next regular rung beyond or above the 3 1/2 feet minimum (Fig. D–10).

(4) Grab bars. Grab bars shall be spaced by a continuation of the rung spacing when they are located in the horizontal position. Vertical grab bars shall have the same spacing as the ladder side rails. Grab–bar diameters shall be the equivalent of the round–rung diameters.

(5) Ladder safety devices. Ladder safety devices may be used on tower, water tank, and chimney ladders over 20 feet in unbroken length in lieu of cage protection. No landing platform is required in these cases. All ladder safety devices such as those that incorporate lifebelts, friction brakes, and sliding attachments shall meet the design requirements of the ladders which they serve.

[Order 73–5, § 296–24–81009, filed 5/9/73 and Order 73–4, § 296–24–81009, filed 5/7/73.]

WAC 296–24–81011 Pitch. Preferred pitch.

(1) The preferred pitch of fixed ladders shall be considered to come in the range of 75 degrees and 90 degrees with the horizontal (Fig. D–11).

(2) Substandard pitch. Fixed ladders shall be considered as substandard if they are installed within the substandard pitch range of 60 and 75 degrees with the horizontal. Substandard fixed ladders are permitted only where it is found necessary to meet conditions of installation. This substandard pitch range shall be considered as a critical range to be avoided, if possible.

(3) Scope of coverage in this section. This section covers only fixed ladders within the pitch range of 60 degrees and 90 degrees with the horizontal.

(4) Pitch greater than 90 degrees. Ladders having a pitch in excess of 90 degrees with the horizontal are prohibited.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-17-015 (Order 80-21), § 296-24-81011, filed 11/13/80; Order 73-5, § 296-24-81011, filed 5/9/73 and Order 73-4, § 296-24-81011, filed 5/7/73.]

WAC 296-24-81013 Maintenance and use. (1) All ladders shall be maintained in a safe condition. All ladders shall be inspected regularly, with the intervals between inspections being determined by use and exposure.

Note: For illustrations, see Figs. D-1 through D-11.

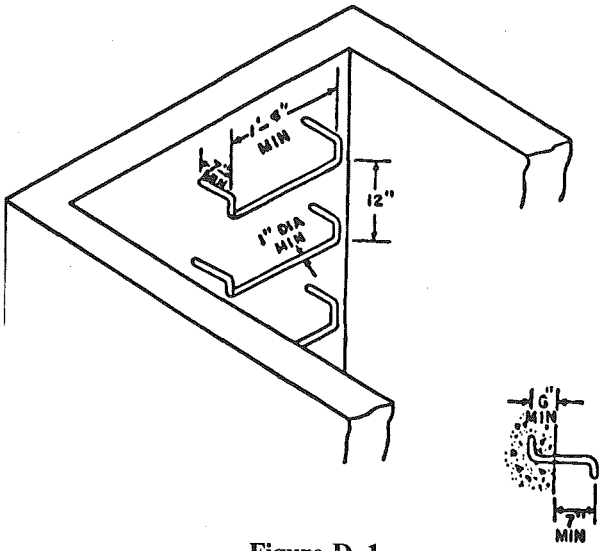
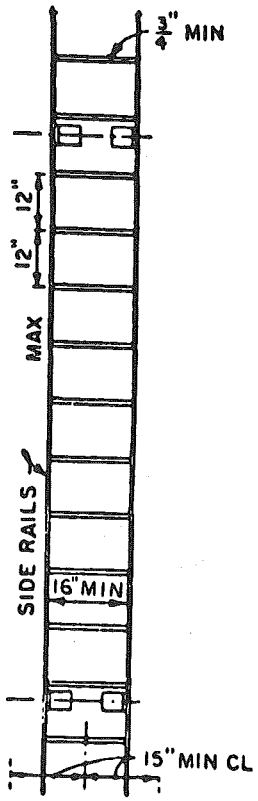
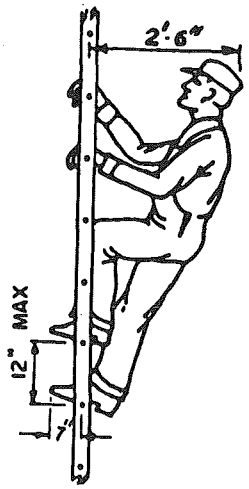


Figure D-1

Suggested design for rungs on individual-rung ladders





RAIL LADDER WITH BAR STEEL RAILS AND ROUND STEEL RUNGS

Figure D-2

Minimum Ladder Clearances

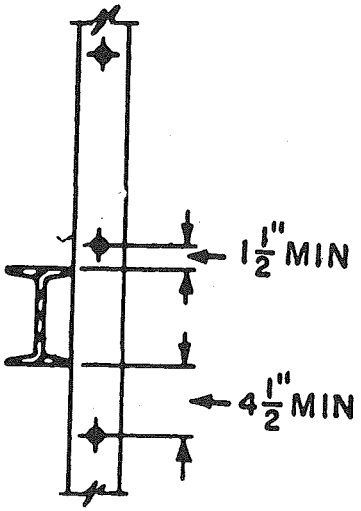


Figure D-3

Clearance for Unavoidable Obstruction at Rear of Fixed Ladder

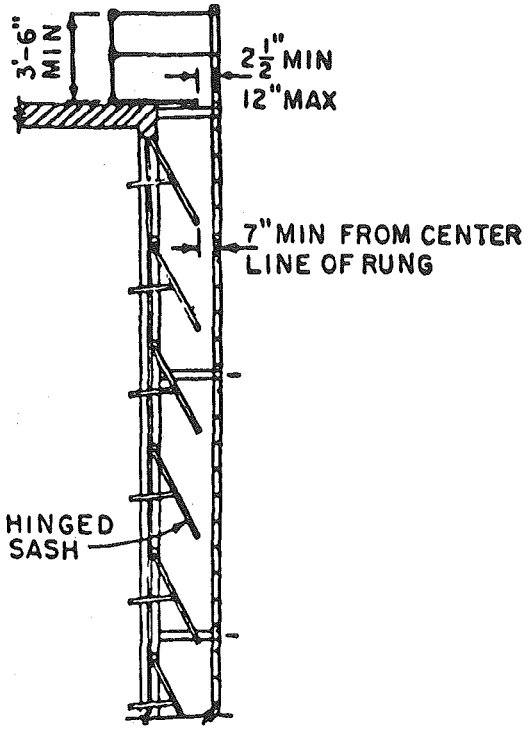


Figure D–4

Ladder Far from Wall

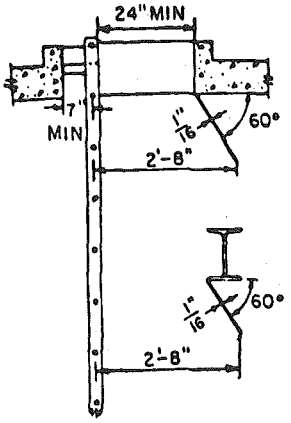


Figure D–5

Deflector Plates for Head Hazards

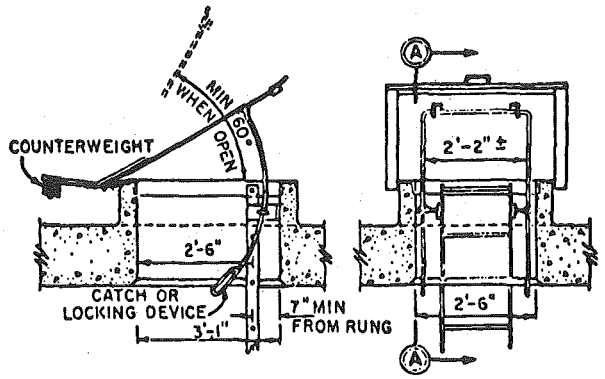


Figure D–6

Relationship of Fixed Ladder to a Safe Access Hatch

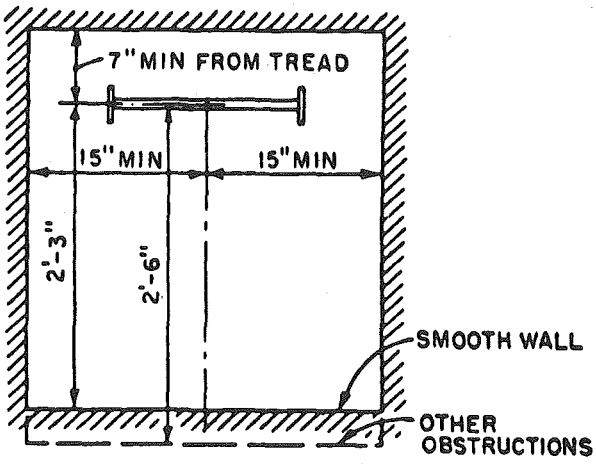
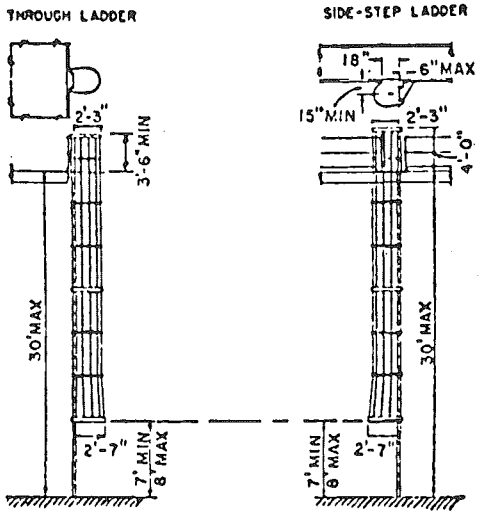


Figure D–7

Clearance Diagram for Fixed Ladder in Well



ACCESS TO LANDING PLATFORM THROUGH LADDER

ACCESS LATERALLY FROM LADDER

Figure D–8 (Part 1)

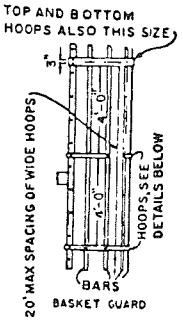
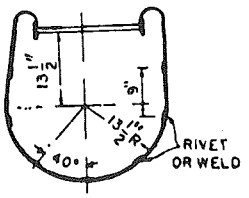
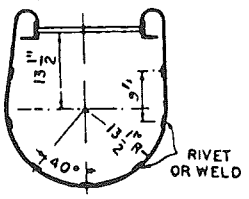


Figure D–8 (Part 2)



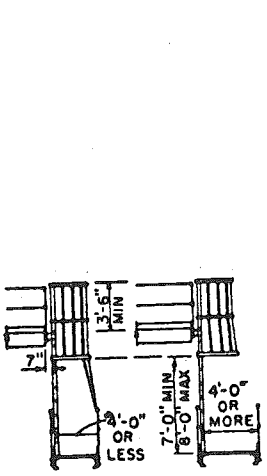
BASKET GUARD HOOP BAR LADDER



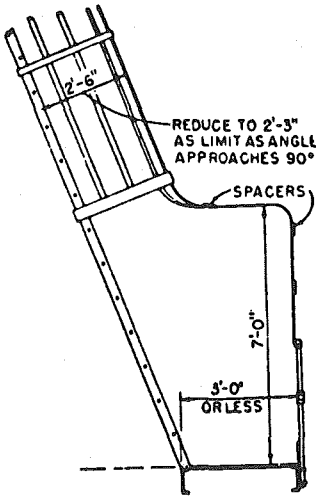
BASKET GUARD HOOP ANGLE IRON LADDER

Figure D–8 (Part 3)

Cages for ladders More Than 20 Feet High



SHORT LADDERS AT ELEVATED LOCATIONS



INCLINED LADDER AT ELEVATED LOCATION (For Special Hazard Only)

Figure D–9

Cages—Special applications

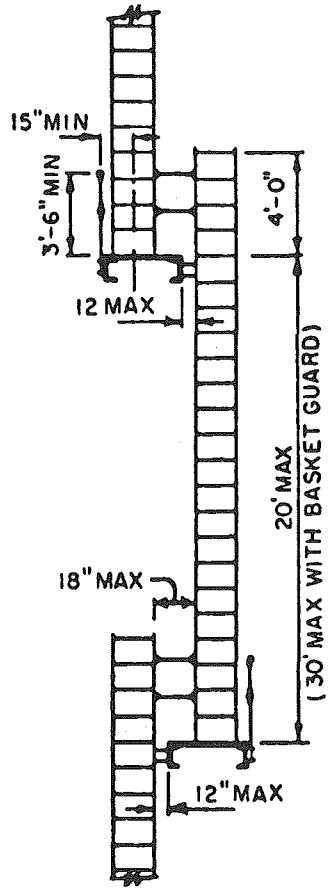


Figure D–10

Offset Fixed Ladder Sections

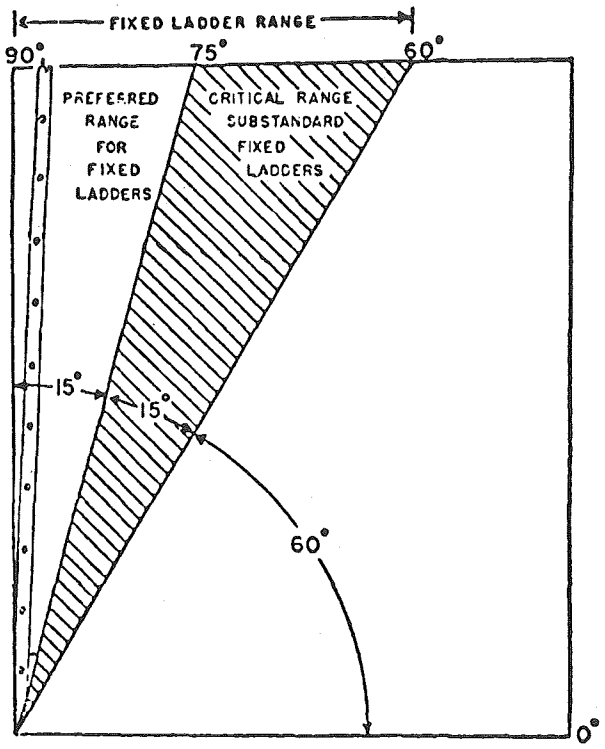


Figure D-11

Pitch of Fixed Ladders

(2) When ascending or descending, the climber must face the ladder.

(3) Workmen shall not ascend or descend ladders while carrying tools or materials which will interfere with the free use of both hands.

[Order 76-6, § 296-24-81013, filed 3/1/76; Order 73-5, § 296-24-81013, filed 5/9/73 and Order 73-4, § 296-24-81013, filed 5/7/73.]

WAC 296-24-825 Safety requirements for scaffolding.

[Order 73-5, § 296-24-825, filed 5/9/73 and Order 73-4, § 296-24-825, filed 5/7/73.]

WAC 296-24-82501 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-82503 through 296-24-82545 unless the context requires otherwise.

(1) Bearer. A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

(2) Boatswain's chair. A seat supported by slings attached to a suspended rope, designed to accommodate one workman in a sitting position.

(3) Brace. A tie that holds one scaffold member in a fixed position with respect to another member.

(4) Bricklayer's square scaffold. A scaffold composed of framed wood squares which support a platform limited to light and medium duty.

(5) Carpenters' bracket scaffold. A scaffold consisting of wood or metal brackets supporting a platform.

(6) Coupler. A device for locking together the component parts of a tubular metal scaffold. The material used for the couplers shall be of a structural type, such as a drop-forged steel, malleable iron, or structural grade aluminum. The use of gray cast iron is prohibited.

(7) Crawling board or chicken ladder. A plank with cleats spaced and secured at equal intervals, for use by a worker on roofs, not designed to carry any material.

(8) Double pole or independent pole scaffold. A scaffold supported from the base by a double row of uprights, independent of support from the walls and constructed of uprights, ledgers, horizontal platform bearers, and diagonal bracing.

(9) Float or ship scaffold. A scaffold hung from overhead supports by means of ropes and consisting of a substantial platform having diagonal bracing underneath, resting upon and securely fastened to two parallel plank bearers at right angles to the span.

(10) Guardrail. A rail secured to uprights and erected along the exposed sides and ends of platforms.

(11) Heavy duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 75 pounds per square foot.

(12) Horse scaffold. A scaffold for light or medium duty, composed of horses supporting a work platform.

(13) Interior hung scaffold. A scaffold suspended from the ceiling or roof structure.

(14) Ladder jack scaffold. A light duty scaffold supported by brackets attached to ladders.

(15) Ledger (stringer). A horizontal scaffold member which extends from post to post and which supports the putlogs or bearer forming a tie between the posts.

(16) Light duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 25 pounds per square foot.

(17) Manually propelled mobile scaffold. A portable rolling scaffold supported by casters.

(18) Mason's adjustable multiple-point suspension scaffold. A scaffold having a continuous platform supported by bearers suspended by wire rope from overhead supports, so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

(19) Maximum intended load. The total of all loads including the working load, the weight of the scaffold, and such other loads as may be reasonably anticipated.

(20) Medium duty scaffold. A scaffold designed and constructed to carry a working load not to exceed 50 pounds per square foot.

(21) Mid-rail. A rail approximately midway between the guardrail and platform, used when required, and secured to the uprights erected along the exposed sides and ends of platforms.

(22) Needle beam scaffold. A light duty scaffold consisting of needle beams supporting a platform.

(23) Outrigger scaffold. A scaffold supported by outriggers or thrustouts projecting beyond the wall or face of the building or structure, the inboard ends of which are secured inside of such a building or structure.

(24) Putlog. A scaffold member upon which the platform rests.

(25) Roofing bracket. A bracket used in sloped roof construction, having provisions for fastening to the roof

or supported by ropes fastened over the ridge and secured to some suitable object.

(26) Runner. The lengthwise horizontal bracing or bearing members or both.

(27) Scaffold. Any temporary elevated platform and its supporting structure used for supporting workmen or materials or both.

(28) Single-point adjustable suspension scaffold. A manually or power-operated unit designed for light duty use, supported by a single wire rope from an overhead support so arranged and operated as to permit the raising or lowering of the platform to desired working positions.

(29) Single pole scaffold. Platforms resting on putlogs or crossbeams, the outside ends of which are supported on ledgers secured to a single row of posts or uprights and the inner ends of which are supported on or in a wall.

(30) Stone setters' adjustable multiple-point suspension scaffold. A swinging-type scaffold having a platform supported by hangers suspended at four points so as to permit the raising or lowering of the platform to the desired working position by the use of hoisting machines.

(31) Toeboard. A barrier secured along the sides and ends of a platform, to guard against the falling of material.

(32) Tube and coupler scaffold. An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and special couplers which serve to connect the uprights and to join the various members.

(33) Tubular welded frame scaffold. A sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections which consist of posts and horizontal bearer with intermediate members. Panels or frames shall be braced with diagonal or cross braces.

(34) Two-point suspension scaffold (swinging scaffold). A scaffold, the platform of which is supported by hangers (stirrups) at two points, suspended from overhead supports so as to permit the raising or lowering of the platform to the desired working position by tackle or hoisting machines.

(35) Window jack scaffold. A scaffold, the platform of which is supported by a bracket or jack which projects through a window opening.

(36) Working load. Load imposed by men, materials, and equipment.

[Order 73-5, § 296-24-82501, filed 5/9/73 and Order 73-4, § 296-24-82501, filed 5/7/73.]

WAC 296-24-82503 General requirements for all scaffolds. (1) Scaffolds shall be furnished and erected in accordance with this standard for persons engaged in work that cannot be done safely from the ground or from solid construction, except that ladders used for such work shall conform to WAC 296-24-780 through 296-24-78009 and 296-24-795 through 296-24-79507.

(2) The footing or anchorage for scaffolds shall be sound, rigid, and capable of carrying the maximum intended load with-out settling or displacement. Unstable objects such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.

(3) Guardrails and toeboards shall be installed on all open sides and ends of platforms more than 8 feet above the ground or floor except:

(a) Scaffolding wholly within the interior of a building and covering the entire floor area of any room therein and not having any side exposed to a hoistway, elevator shaft, stairwell, or other floor openings, and

(b) Needle-beam scaffolds and floats in use by structural iron workers.

Guardrails should all be 2 x 4 inches or the equivalent, installed no less than 36 inches or not more than 42 inches high, with a midrail, when required, of 1- x 4-inch nominal lumber or equivalent. Supports should be at intervals not to exceed ten feet. Toeboards shall be a minimum of 4 inches nominal lumber in height.

(4) Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load.

(5) Scaffolds and other devices mentioned or described in these standards shall be maintained in safe condition. Scaffolds shall not be altered or moved horizontally while they are in use or occupied.

(6) Any scaffold damaged or weakened from any cause shall be immediately repaired and shall not be used until repairs have been completed.

(7) Scaffolds shall not be loaded in excess of the working load for which they are intended.

(8) All load-carrying timber members of scaffold framing shall be a minimum of 1,500 f. (stress grade) construction grade lumber. All dimensions are nominal sizes as provided in the American Lumber Standards, except that where rough sizes are noted, only rough or undressed lumber of the size specified will satisfy minimum requirements. (NOTE: Where nominal sizes of lumber are used in place of rough sizes the nominal size lumber shall be such as to provide equivalent strength to that specified in Tables D-7 through D-12 and D-16.)

(9) All planking shall be Scaffold Grade as recognized by grading rules for the species of wood used. The maximum permissible spans for 2- x 9-inch or wider planks are shown in the following table:

	Material				
	Full thickness undressed lumber			Nominal thickness lumber	
Working load (p.s.f.)	25	50	75	25	50
Permissible span (ft.)	10	8	6	8	6

The maximum permissible span for 1 1/4 x 9-inch or wider plank of full thickness is 4 feet with medium loading of 50 p.s.f.

(10) Nails or bolts used in the construction of scaffolds shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of

the scaffold. Nails shall not be subjected to a straight pull and shall be driven full length.

(11) All planking or platforms shall be overlapped (minimum 12 inches) or secured from movement.

(12) An access ladder or equivalent safe access shall be provided.

(13) Scaffold planks shall extend over their end supports not less than 6 inches nor more than 18 inches.

(14) The poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.

TABLE D-7

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load	Not to exceed 25 pounds per square foot.	
Poles or uprights	2 by 4 in.	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.	5 ft. 0 in.
Bearers or putlogs to 3 ft. 0 in. width	2 by 4 in.	2 by 4 in.
Bearers or putlogs to 5 ft. 0 in. width	2 by 6 in. or 3 by 4 in.	2 by 6 in. or 3 by 4 in. (rough)
Ledgers	1 by 4 in.	1 1/4 by 9 in.
Planking	1 1/4 by 9 in. (rough)	2 by 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 by 4 in.	1 by 4 in.
Tie-ins	1 by 4 in.	1 by 4 in.
Toeboards	4 in. high (minimum)	4 in. high (minimum)
Guardrail	2 by 4 in.	2 by 4 in.

All members except planking are used on edge.

TABLE D-8

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	8 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.
Bearers or putlogs	2 by 9 in. or 3 by 4 in.
Spacing of bearers or putlogs	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	9 ft. 0 in.
Bracing, horizontal	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal	1 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum)
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-9

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS HEAVY DUTY

Uniformly distributed load	Not to exceed 75 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.
Maximum width of scaffold	5 ft. 0 in.
Bearers or putlogs	2 by 9 in. or 3 by 5 in. (rough).
Spacing of bearers or putlogs	6 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	6 ft. 6 in.
Bracing, horizontal and diagonal	2 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.

TABLE D-9

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF SINGLE POLE SCAFFOLDS HEAVY DUTY

Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-10

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS LIGHT DUTY

	Maximum height of scaffold	
	20 feet	60 feet
Uniformly distributed load	Not to exceed 25 pounds per square foot.	
Poles or uprights	2 by 4 in.	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.	10 ft. 0 in.
Pole spacing (transverse)	6 ft. 0 in.	10 ft. 0 in.
Ledgers	1 1/4 by 4 in.	1 1/4 by 9 in.
Bearers to 3 ft. 0 in. span	2 by 4 in.	2 by 4 in.
Bearers to 10 ft. 0 in. span	2 by 6 in. or 3 by 4 in.	2 by 9 (rough) or 3 by 8 in.
Planking	1 1/4 by 9 in.	2 by 9 in.
Vertical spacing of horizontal members	7 ft. 0 in.	7 ft. 0 in.
Bracing, horizontal and diagonal	1 by 4 in.	1 by 4 in.
Tie-ins	1 by 4 in.	1 by 4 in.
Toeboards	4 in. high	4 in. high (minimum).
Guardrail	2 by 4 in.	2 by 4 in.

All members except planking are used on edge.

TABLE D-11

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS MEDIUM DUTY

Uniformly distributed load	Not to exceed 50 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	8 ft. 0 in.
Pole spacing (transverse)	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	6 ft. 0 in.
Spacing of bearers	8 ft. 0 in.
Bearers	2 by 9 in. rough or 2 by 10 in.
Bracing, horizontal	1 by 6 in. or 1 1/4 by 4 in.
Bracing, diagonal	1 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

TABLE D-12

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF INDEPENDENT POLE SCAFFOLDS HEAVY DUTY

Uniformly distributed load	Not to exceed 75 pounds per square foot.
Maximum height of scaffold	60 ft.
Poles or uprights	4 by 4 in.
Pole spacing (longitudinal)	6 ft. 0 in.
Pole spacing (transverse)	8 ft. 0 in.
Ledgers	2 by 9 in.
Vertical spacing of horizontal members	4 ft. 6 in.
Bearers	2 by 9 in. (rough).
Bracing, horizontal and diagonal	2 by 4 in.
Tie-ins	1 by 4 in.
Planking	2 by 9 in.
Toeboards	4 in. high (minimum).
Guardrail	2 by 4 in.

All members except planking are used on edge.

(15) Materials being hoisted onto a scaffold shall have a tag line.

(16) Overhead protection shall be provided for workmen working on a scaffold when they are exposed to overhead hazards.

(17) Scaffolds shall be provided with a screen between the toe board and the guardrail, extending along the entire opening, consisting of No. 18 gauge U.S. Standard Wire one-half-inch mesh or the equivalent, where persons are required to work or pass under the scaffolds.

(18) Employees shall not work on scaffolds during storms or high winds.

(19) Employees shall not work on scaffolds which are covered with ice or snow.

(20) Tools, materials, and debris shall not be allowed to accumulate in quantities to cause a hazard.

(21) Only treated or protected fiber rope shall be used for or near any work involving the use of corrosive substances or chemicals.

(22) Wire or fiber rope used for scaffold suspension shall be capable of supporting at least six times the intended load.

(23) When acid solutions are used for cleaning buildings over 50 feet in height, wire rope supported scaffolds shall be used.

(24) The use of shore scaffolds or leanto scaffolds is prohibited.

(25) Lumber sizes, when used in WAC 296-24-82505 through 296-24-82545, refer to nominal sizes except where otherwise stated.

(26) Scaffolds shall be secured to permanent structures, through use of anchor bolts, reveal bolts, or other equivalent means. Window cleaners' anchor bolts shall not be used.

(27) Special precautions shall be taken to protect scaffold members, including any wire or fiber ropes, when using a heat-producing process.

(28) When rope falls are used to support swinging scaffolding, the rope falls shall be of sufficient length to reach the ground. Lengthening rope falls by typing on additional lengths shall be prohibited.

(29) When screw shackles are used to support staging, etc., the pin must be wired or pinned so that the shackle will not become unscrewed by strain or stress.

(30) All hooks on blocks used for raising scaffolding shall be provided with a safety latch or be "moused at the throat" to prevent the hook from becoming dislodged.

(31) Lifelines size shall be 3/4 inch manila rope or equivalent with a minimum breaking strength of 5400 pounds. Safety belt lanyards shall be a minimum of 1/2 inch nylon or equivalent with a maximum length to provide for a fall of no greater than 6 feet. This rope shall have a minimum breaking strength of 5400 pounds.

[Order 74-27, § 296-24-82503, filed 5/7/74; Order 73-5, § 296-24-82503, filed 5/9/73 and Order 73-4, § 296-24-82503, filed 5/7/73.]

WAC 296-24-82505 General requirements for wood pole scaffolds. (1) Scaffold poles shall bear on a foundation of sufficient size and strength to spread the load from the poles over a sufficient area to prevent settlement. All poles shall be set plumb.

(2) Where wood poles are spliced, the ends shall be squared and the upper section shall rest squarely on the lower section. Wood splice plates shall be provided on at least two adjacent sides and shall not be less than 4 feet 0 inches in length, overlapping the abutted ends equally, and have the same width and not less than the cross-sectional area of the pole. Splice plates of other materials of equivalent strength may be used.

(3) Independent pole scaffolds shall be set as near to the wall of the building as practicable.

(4) All pole scaffolds shall be securely guyed or tied to the building or structure. Where the height or length exceeds 25 feet, the scaffold shall be secured at intervals not greater than 25 feet vertically and horizontally.

(5) Putlogs or bearers shall be set with their greater dimensions vertical, long enough to project over the ledgers of the inner and outer rows of poles at least 3 inches for proper support.

(6) Every wooden putlog on single pole scaffolds shall be reinforced with a 3/16 x 2-inch steel strip or equivalent secured to its lower edge throughout its entire length.

(7) Ledgers shall be long enough to extend over two pole spaces. Ledgers shall not be spliced between the poles. Ledgers shall be reinforced by bearing blocks securely nailed to the side of the pole to form a support for the ledger.

(8) Diagonal bracing shall be provided to prevent the poles from moving in a direction parallel with the wall of the building, or from buckling.

(9) Cross bracing shall be provided between the inner and outer sets of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross braced.

(10) Full diagonal face bracing shall be erected across the entire face of pole scaffolds in both directions. The braces shall be spliced at the poles.

(11) Platform planks shall be laid with their edges close together so the platform will be tight with no spaces through which tools or fragments of material can fall.

(12) Where planking is lapped, each plank shall lap its end supports at least 12 inches. Where the ends of planks abut each other to form a flush floor, the butt joint shall be at the centerline of a pole. The abutted ends shall rest on separate bearers. Intermediate beams shall be provided where necessary to prevent dislodgement of planks due to deflection, and the ends shall be nailed or cleated to prevent their dislodgement.

(13) When a scaffold turns a corner, the platform planks shall be laid to prevent tipping. The planks that meet the corner putlog at an angle shall be laid first, extending over the diagonally placed putlog far enough to have a good safe bearing, but not far enough to involve any danger from tipping. The planking running in the opposite direction at right angles shall be laid so as to extend over and rest on the first layer of planking.

(14) When moving platforms to the next level, the old platform shall be left undisturbed until the new putlogs

or bearers have been set in place, ready to receive the platform planks.

(15) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 8 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(16) All wood pole scaffolds 60 feet or less in height shall be constructed and erected in accordance with Tables D-7 through D-12. If they are over 60 feet in height they shall be designed by a registered professional engineer and constructed and erected in accordance with such design. A copy of the typical drawings and specifications shall be made available to the employer and for inspection purposes.

(17) Wood-pole scaffolds shall not be erected beyond the reach of effective firefighting apparatus.

[Order 73-5, § 296-24-82505, filed 5/9/73 and Order 73-4, § 296-24-82505, filed 5/7/73.]

WAC 296-24-82507 Tube and coupler scaffolds. (1) A light-duty tube and coupler scaffold shall have all posts, bearers, runners, and bracing of nominal 2-inch O.D. steel tubing. The posts shall be spaced no more than 6 feet apart by 10 feet along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(2) A medium-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing. Posts spaced not more than 6 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2 1/2-inch O.D. steel tubing. Posts spaced not more than 5 feet apart by 8 feet along the length of the scaffold shall have bearers of nominal 2-inch O.D. steel tubing. Other structural metals when used must be designed to carry an equivalent load.

(3) A heavy-duty tube and coupler scaffold shall have all posts, runners, and bracing of nominal 2-inch O.D. steel tubing, with the posts spaced not more than 6 feet apart by 6 feet 6 inches along the length of the scaffold. Other structural metals when used must be designed to carry an equivalent load.

(4) Tube and coupler scaffolds shall be limited in heights and working levels to those permitted in Tables D-13, 14, and 15. Drawings and specifications of all tube and coupler scaffolds above the limitations in Tables D-13, 14, and 15 shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(5) All tube and coupler scaffolds shall be constructed and erected to support four times the maximum intended loads as set forth in Tables D-13, 14, and 15, or as set forth in the specifications by a registered professional engineer, copies which shall be made available to the employer and for inspection purposes.

(6) All tube and coupler scaffolds shall be erected by competent and experienced personnel.

(7) Posts shall be accurately spaced, erected on suitable bases, and maintained plumb.

(8) Runners shall be erected along the length of the scaffold located on both the inside and the outside posts at even height. Runners shall be interlocked to form continuous lengths and coupled to each post. The bottom runners shall be located as close to the base as possible. Runners shall be placed not more than 6 feet 6 inches on centers.

(9) Bearers shall be installed transversely between posts and shall be securely coupled to the posts bearing on the runner coupler. When coupled directly to the runners, the coupler must be kept as close to the posts as possible.

(10) Bearers shall be at least 4 inches but not more than 12 inches longer than the post spacing or runner spacing. Bearers may be cantilevered for use as brackets to carry not more than two planks.

(11) Cross bracing shall be installed across the width of the scaffold at least every third set of posts horizontally and every fourth runner vertically. Such bracing shall extend diagonally from the inner and outer runners upward to the next outer and inner runners.

(12) Longitudinal diagonal bracing shall be installed at approximately a 45-degree angle from near the base of the first outer post upward to the extreme top of the scaffold. Where the longitudinal length of the scaffold permits, such bracing shall be duplicated beginning at every fifth post. In a similar manner, longitudinal diagonal bracing shall also be installed from the last post extending back and upward toward the first post. Where conditions preclude the attachment of this bracing to the posts, it may be attached to the runners.

(13) The entire scaffold shall be tied to and securely braced against the building at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(14) Guardrails not less than 2 x 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1 x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17). (See Tables D-13, 14 and 15.)

TABLE D-13

TUBE AND COUPLER SCAFFOLDS
LIGHT DUTY

Uniformly distributed load	Not to exceed 25 p.s.f.
Post spacing (longitudinal)	10 ft. 0 in.
Post spacing (transverse)	6 ft. 0 in.

TABLE D-13

TUBE AND COUPLER SCAFFOLDS
LIGHT DUTY

Working levels	Additional planked levels	Maximum height
1	8	125 ft.
2	4	125 ft.
3	0	91 ft. 0 in.

TABLE D-14

TUBE AND COUPLER SCAFFOLDS
MEDIUM DUTY

Uniformly distributed load ——— Not to exceed 50 p.s.f.
Post spacing (longitudinal) ——— 8 ft. 0 in.
Post spacing (transverse) ——— 6 ft. 0. in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.
2	0	78 ft. 0 in.

TABLE D-15

TUBE AND COUPLER SCAFFOLDS
HEAVY DUTY

Uniformly distributed load ——— Not to exceed 75 p.s.f.
Post spacing (longitudinal) ——— 6 ft. 6 in.
Post spacing (transverse) ——— 6 ft. 0 in.

Working levels	Additional planked levels	Maximum height
1	6	125 ft.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82507, filed 7/31/79; Order 73-5, § 296-24-82507, filed 5/9/73 and Order 73-4, § 296-24-82507, filed 5/7/73.]

WAC 296-24-82509 Tubular welded frame scaffolds. (1) Metal tubular frame scaffolds, including accessories such as braces, brackets, trusses, screw legs, ladders, etc., shall be designed and proved to safely support four times the maximum intended load.

(2) Spacing of panels or frames shall be consistent with the loads imposed.

(3) Scaffolds shall be properly braced by cross bracing or diagonal braces, or both, for securing vertical members together laterally, and the cross braces shall be of such length as will automatically square and align vertical members so that the erected scaffold is always plumb, square, and rigid. All brace connections shall be made secure.

(4) Scaffold legs shall be set on adjustable bases or plain bases placed on mud sills or other foundations adequate to support the maximum intended load.

(5) The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alinement of the legs.

(6) Where uplift may occur, panels shall be locked together vertically by pins or other equivalent suitable means.

(7) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(8) All tubular metal scaffolds shall be constructed and erected to support four times the maximum intended loads.

(9) To prevent movement, the scaffold shall be secured to the building or structure at intervals not to exceed 30 feet horizontally and 26 feet vertically.

(10) Maximum permissible spans of planking shall be in conformity with WAC 296-24-82503(9).

(11) Drawings and specifications for all frame scaffolds over 125 feet in height above the base plates shall be designed by a registered professional engineer and copies made available to the employer and for inspection purposes.

(12) All tubular welded frame scaffolds shall be erected by competent and experienced personnel.

(13) Frames and accessories for scaffolds shall be maintained in good repair and every defect, unsafe condition, or noncompliance with this section shall be immediately corrected before further use of the scaffold. Any broken, bent, excessively rusted, altered, or otherwise structurally damaged frames or accessories shall not be used.

(14) Periodic inspections shall be made of all welded frames and accessories, and any maintenance, including painting, or minor corrections authorized by the manufacturer, shall be made before further use.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82509, filed 7/31/79; Order 73-5, § 296-24-82509, filed 5/9/73 and Order 73-4, § 296-24-82509, filed 5/7/73.]

WAC 296-24-82511 Outrigger scaffolds. (1) Outrigger beams shall extend not more than 6 feet beyond the face of the building. The inboard end of the outrigger beams, measured from the fulcrum point to the extreme point of support, shall be not less than one and

one–half times the outboard end in length. The beams shall rest on edge, the sides shall be plumb and the edges shall be horizontal. The fulcrum point of the beam shall rest on a secure bearing at least 6 inches in each horizontal dimension. The beam shall be secured in place against movement and shall be securely braced at the fulcrum point against tipping.

(2) The inboard ends of outrigger beams shall be securely supported either by means of struts bearing against sills in contact with the overhead beams or ceiling, or by means of tension members secured to the floor joists underfoot, or by both if necessary. The inboard ends of outrigger beams shall be secured against tipping and the entire supporting structure shall be securely braced in both directions to prevent any horizontal movement.

(3) Unless outrigger scaffolds are designed by a licensed professional engineer, they shall be constructed and erected in accordance with Table D–16. Outrigger scaffolds designed by a registered professional engineer shall be constructed and erected in accordance with such design. A copy of the detailed drawings and specifications showing the sizes and spacing of members shall be kept on the job.

(4) Planking shall be laid tight and shall extend to within 3 inches of the building wall. Planking shall be nailed or bolted to outriggers.

(5) Where there is danger of material falling from the scaffold, a wire mesh or other enclosure shall be provided between the guardrail and the toeboard.

(6) Where additional working levels are required to be supported by the outrigger method, the plans and specifications of the outrigger and scaffolding structure shall be designed by a registered professional engineer to comply with requirements of this section.

TABLE D–16

MINIMUM NOMINAL SIZE AND MAXIMUM SPACING OF MEMBERS OF OUTRIGGER SCAFFOLDS

	Light duty	Medium duty
Maximum scaffold load	25 p.s.f.	50 p.s.f.
Outrigger size	2 x 10 in.	3 x 10 in.
Maximum outrigger spacing	10 ft. 0 in.	6 ft. 0 in.
Planking	2 x 9 in.	2 x 9 in.
Guardrail	2 x 4 in.	2 x 4 in.
Guardrail uprights	2 x 4 in.	2 x 4 in.
Toeboards	4 in. (minimum).	4 in. (minimum).

[Order 73–5, § 296–24–82511, filed 5/9/73 and Order 73–4, § 296–24–82511, filed 5/7/73.]

WAC 296–24–82513 Masons' adjustable multiple–point suspension scaffolds. (1) The scaffold shall be capable of sustaining a working load of 50 pounds per square foot and shall not be loaded in excess of that figure.

(2) The scaffold shall be provided with hoisting machines that meet the requirements of Underwriters' Laboratories or Factory Mutual Engineering Corp.

(3) The platform shall be supported by wire ropes in conformity with WAC 296–24–82503(22), suspended from overhead outrigger beams.

(4) The scaffold outrigger beams shall consist of structural metal securely fastened or anchored to the frame or floor system of the building or structure.

(5) Each outrigger beam shall be equivalent in strength to at least a standard 7–inch, 15.3–pound steel I–beam, be at least 15 feet long, and shall not project more than 6 feet 6 inches beyond the bearing point.

(6) Where the overhang exceeds 6 feet 6 inches, outrigger beams shall be composed of stronger beams or multiple beams and be installed in accordance with approved designs and instructions.

(7) If channel iron outrigger beams are used in place of I–beams, they shall be securely fastened together with the flanges turned out.

(8) All outrigger beams shall be set and maintained with their webs in a vertical position.

(9) A stop bolt shall be placed at each end of every outrigger beam.

(10) The outrigger beam shall rest on suitable wood–bearing blocks.

(11) All parts of the scaffold such as bolts, nuts, fittings, clamps, wire rope, and outrigger beams and their fastenings, shall be maintained in sound and good working condition and shall be inspected before each installation and periodically thereafter.

(12) The free end of the suspension wire ropes shall be equipped with proper size thimbles and be secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of rope shall at all times remain on the drum.

(13) Where a single outrigger beam is used, the steel shackles or clevises with which the wire ropes are attached to the outrigger beams shall be placed directly over the hoisting drums.

(14) The scaffold platform shall be equivalent in strength to at least 2–inch planking. (For maximum planking spans see WAC 296–24–82503(22)).

(15) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of 1 x 4–inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 8 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

(16) Overhead protection shall be provided on the scaffold, not more than 9 feet above the platform, consisting of 2–inch planking or material of equivalent strength laid tight, when men are at work on the scaffold and an overhead hazard exists.

(17) Each scaffold shall be installed or relocated in accordance with designs and instructions, of a registered professional engineer, and supervised by a competent,

designated person to comply with the requirements of this section.

[Order 73-5, § 296-24-82513, filed 5/9/73 and Order 73-4, § 296-24-82513, filed 5/7/73.]

WAC 296-24-82515 Two-point suspension scaffolds (swinging scaffolds). (1) Two-point suspension scaffold platforms shall be not less than 20 inches nor more than 36 inches wide overall. The platform shall be securely fastened to the hangers by U-bolts or by other equivalent means.

(2) The hangers of two-point suspension scaffolds shall be made of wrought iron, mild steel, or other equivalent material having a cross-sectional area capable of sustaining four times the maximum intended load, and shall be designed with a support for guardrail, intermediate rail, and toeboard.

(3) When hoisting machines are used on two-point suspension scaffolds, such machines shall be of a design tested and approved by Underwriters' Laboratories or Factory Mutual Engineering Corp.

(4) The roof irons or hooks shall be of wrought iron, mild steel, or other equivalent material of proper size and design, securely installed and anchored. Tiebacks of 3/4-inch manila rope or the equivalent shall serve as a secondary means of anchorage, installed at right angles to the face of the building whenever possible and secured to a structurally sound portion of the building.

(5) Guardrails not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- x 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(6) Two-point suspension scaffolds shall be suspended by wire or fiber ropes. Wire and fiber ropes shall conform to WAC 296-24-82503(22).

(7) The blocks for fiber ropes shall be of standard 6-inch size, consisting of at least one double and one single block. The sheaves of all blocks shall fit the size of rope used.

(8) All wire ropes, fiber ropes, slings, hangers, platforms, and other supporting parts shall be inspected before every installation. Periodic inspections shall be made while the scaffold is in use.

(9) On suspension scaffolds designed for a working load of 500 pounds no more than two men shall be permitted to work at one time. On suspension scaffolds with a working load of 750 pounds, no more than three men shall be permitted to work at one time. Each workman shall be protected by a safety lifebelt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the workman in case of a fall.

(10) Where acid solutions are used, fiber ropes are not permitted unless acid-proof.

(11) Two-point suspension scaffolds shall be securely lashed to the building or structure to prevent them from swaying. Window cleaners' anchors shall not be used for this purpose.

(12) The platform of every two-point suspension scaffold shall be one of the following types:

(a) The side stringer of ladder-type platforms shall be clear straight-grained spruce or materials of equivalent strength and durability. The rungs shall be of straight-grained oak, ash, or hickory, at least 1 1/8 inch in diameter, with seven-eighth inch tenons mortised into the side stringers at least seven-eighth inch. The stringers shall be tied together with the tie rods not less than one-quarter inch in diameter, passing through the stringers and riveted up tight against washers on both ends. The flooring strips shall be spaced not more than five-eighth inch apart except at the side rails where the space may be 1 inch. Ladder-type platforms shall be constructed in accordance with Table D-17.

(b) Plank-type platforms shall be composed of not less than nominal 2- x 8-inch unspliced planks, properly cleated together on the underside starting 6 inches from each end; intervals in between shall not exceed 4 feet. The plank-type platform shall not extend beyond the hangers more than 18 inches. A bar or other effective means shall be securely fastened to the platform at each end to prevent its slipping off the hanger. The span between hangers for plank-type platforms shall not exceed 10 feet.

(c) Beam platforms shall have side stringers of lumber not less than 2 x 6 inches set on edge. The span between hangers shall not exceed 12 feet when beam platforms are used. The flooring shall be supported on 2- and 6-inch crossbeams, laid flat and set into the upper edge of the stringers with a snug fit, at intervals of not more than 4 feet, securely nailed in place. The flooring shall be of 1- x 6-inch material properly nailed. Floorboards shall not be spaced more than one-half inch apart. (See Table D-17.)

TABLE D-17

SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)				
	12	14&16	18&20	22&24	28&30
Side stringers, minimum cross section (finished sizes):					
At ends (in.)	1 3/4 x2 3/4	1 3/4 x2 3/4	1 3/4 x3	1 3/4 x3	1 3/4 x3 1/2
At middle (in.)	1 3/4 x3 3/4	1 3/4 x3 3/4	1 3/4 x4	1 3/4 x4 1/4	1 3/4 x5
Reinforcing strip (minimum)	A 1/8x7/8-in. steel reinforcing strip or its equivalent shall be attached to the side or underside, full length.				
Rungs	Rungs shall be 1 1/8-in. minimum diameter with at least 7/8-in. diameter tenons, and the maximum spacing shall be 12 in. center to center.				

TABLE D-17

SCHEDULE FOR LADDER-TYPE PLATFORMS

	Length of platform (feet)				
	12	14&16	18&20	22&24	28&30
Tie rods:					
Number (minimum)——	3	4	4	5	6
Diameter (minimum)—	1/4 in.	1/4 in.	1/4 in.	1/4 in.	1/4 in.
Flooring, minimum finished size (in.) ——	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4	1/2 x2 3/4

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80-11-010 (Order 80-14), § 296-24-82515, filed 8/8/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82515, filed 7/31/79; Order 73-5, § 296-24-82515, filed 5/9/73 and Order 73-4, § 296-24-82515, filed 5/7/73.]

WAC 296-24-82517 Stone setters' adjustable multiple-point suspension scaffolds. (1) The scaffold shall be capable of sustaining a working load of 25 pounds per square foot and shall not be overloaded. Scaffolds shall not be used for storage of stone or other heavy materials.

(2) The hoisting machine and its supports shall be of a type tested and listed by Underwriters' Laboratories or Factory Mutual Engineering Corp.

(3) The platform shall be securely fastened to the hangers by U-bolts or other equivalent means.

(4) The scaffold unit shall be suspended from metal outriggers, iron brackets, wire rope slings, or iron hooks which will safely support the maximum intended load.

(5) Outriggers when used shall be set with their webs in a vertical position, securely anchored to the building or structure and provided with stop bolts at each end.

(6) The scaffold shall be supported by wire rope conforming with WAC 296-24-82503(22), suspended from overhead supports.

(7) The free ends of the suspension wire ropes shall be equipped with proper size thimbles, secured by splicing or other equivalent means. The running ends shall be securely attached to the hoisting drum and at least four turns of rope shall remain on the drum at all times.

(8) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid-rail, when required, of 1- by 4-inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296-24-82503(17).

(9) When two or more scaffolds are used on a building or structure they shall not be bridged one to the other but shall be maintained at even height with platforms butting closely.

(10) Each scaffold shall be installed or relocated in accordance with designs and instructions of a registered professional engineer, and such installation or relocation shall be supervised by a competent designated person to comply with requirements of this section.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-82517, filed 7/31/79; Order 73-5, § 296-24-82517, filed 5/9/73 and Order 73-4, § 296-24-82517, filed 5/7/73.]

WAC 296-24-82519 Single-point adjustable suspension scaffolds. (1) The scaffolding, including power units or manually operated winches, shall be of a type tested and listed by Underwriters' Laboratories or Factory Mutual Engineering Corp.

(2) The power units may be either electrically or air motor driven.

(3) All power-operated gears and brakes shall be enclosed.

(4) In addition to the normal operating brake, all-power driven units must have an emergency brake which engages automatically when the normal speed of descent is exceeded.

(5) Guards, mid-rails, and toeboards shall completely enclose the cage or basket. Guardrails shall be no less than 2 by 4 inches nominal lumber or the equivalent installed no less than 36 inches nor more than 42 inches above the platform. Mid-rails shall be 1 by 6 inches nominal lumber or the equivalent, installed equidistant between the guardrail and the platform. Toeboards shall be a minimum of 4 inches nominal lumber in height.

(6) The hoisting machines, cables, and equipment shall be regularly serviced and inspected after each installation and every 30 days thereafter.

(7) The units may be combined to form a two-point suspension scaffold. Such scaffold shall comply with WAC 296-24-82515.

(8) The supporting cable shall be straight for its entire length, and the operator shall not sway the basket and fix the cable to any intermediate points to change his original path of travel.

(9) Equipment shall be maintained and used in accordance with the manufacturers' instructions.

(10) Suspension methods shall conform to applicable provisions of WAC 296-24-82515 and 296-24-82517.

[Order 73-5, § 296-24-82519, filed 5/9/73 and Order 73-4, § 296-24-82519, filed 5/7/73.]

WAC 296-24-82521 Boatswain's chairs. (1) The chair seat shall be not less than 12 by 24 inches, and of 1-inch thickness. The seat shall be reinforced on the underside to prevent the board from splitting.

(2) The two fiber rope seat slings shall be of 5/8-inch diameter, reeved through the four seat holes so as to cross each other on the underside of the seat.

(3) Seat slings shall be of at least 3/8-inch wire rope when a workman is conducting a heat producing process such as gas or arc welding.

(4) The workman shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the worker in case of a fall.

(5) The tackle shall consist of correct size ball bearing or bushed blocks and properly spliced 5/8–inch diameter first–grade manila rope or equivalent strength synthetic–fiber rope.

(6) The roof irons, hooks, or the object to which the tackle is anchored shall be securely installed. Tiebacks when used shall be installed at right angles to the face of the building and securely fastened to a chimney.

[Statutory Authority: RCW 49.17.040, 49.17.050, and 49.17.240. 80–11–010 (Order 80–14), § 296–24–82521, filed 8/8/80. Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82521, filed 7/31/79; Order 73–5, § 296–24–82521, filed 5/9/73 and Order 73–4, § 296–24–82521, filed 5/7/73.]

WAC 296–24–82523 Carpenters' bracket scaffolds. (1) The brackets shall consist of a triangular wood frame not less than 2 by 3 inches in cross section, or of metal of equivalent strength. Each member shall be properly fitted and securely joined.

(2) Each bracket shall be attached to the structure by means of one of the following:

(a) A bolt no less than 5/8–inch in diameter which shall extend through the inside of the building wall.

(b) A metal stud attachment device.

(c) Welding to steel tanks.

(d) Hooking over or securing through a well–secured and adequately strong supporting member.

The brackets shall be spaced no more than 10 feet apart.

(3) No more than two persons shall occupy any given 10 feet of a bracket scaffold at any one time. Tools and materials shall not exceed 75 pounds in addition to the occupancy.

(4) The platform shall consist of not less than two 2– by 10–inch nominal size planks extending not more than 10 inches or less than 6 inches beyond each end support.

(5) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of 1– by 4–inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82523, filed 7/31/79; Order 76–6, § 296–24–82523, filed 3/1/76; Order 73–5, § 296–24–82523, filed 5/9/73 and Order 73–4, § 296–24–82523, filed 5/7/73.]

WAC 296–24–82525 Bricklayers' square scaffolds. (1) The squares shall not exceed 5 feet in width and 5 feet in height.

(2) Members shall be not less than those specified in Table D–18.

(3) The squares shall be reinforced on both sides of each corner with 1– by 6–inch gusset pieces. They shall also have braces 1 by 8 inches on both sides running from center to center of each member, or other means to secure equivalent strength and rigidity.

(4) The squares shall be set not more than 5 feet apart for medium duty scaffolds, and not more than 8 feet apart for light duty scaffolds. Bracing 1 x 8 inches, extending from the bottom of each square to the top of the next square, shall be provided on both front and rear sides of the scaffold.

TABLE D–18

MINIMUM DIMENSIONS FOR BRICKLAYERS' SQUARE SCAFFOLD MEMBERS

Members:	Dimensions (inches)
Bearers or horizontal members	2 by 6
Legs	2 by 6
Braces at corners	1 by 6
Braces diagonally from center frame	1 by 8

(5) Platform planks shall be at least 2– by 10–inch nominal size. The ends of the planks shall overlap the bearers of the squares and each plank shall be supported by not less than three squares.

(6) Bricklayers' square scaffolds shall not exceed three tiers in height and shall be so constructed and arranged that one square shall rest directly above the other. The upper tiers shall stand on a continuous row of planks laid across the next lower tier and be nailed down or otherwise secured to prevent displacement.

(7) Scaffolds shall be level and set upon a firm foundation.

[Order 73–5, § 296–24–82525, filed 5/9/73 and Order 73–4, § 296–24–82525, filed 5/7/73.]

WAC 296–24–82527 Horse scaffolds. (1) Horse scaffolds shall not be constructed or arranged more than two tiers or 10 feet in height.

(2) The members of the horses shall be not less than those specified in Table D–19.

(3) Horses shall be spaced not more than 5 feet for medium duty and not more than 8 feet for light duty.

(4) When arranged in tiers, each horse shall be placed directly over the horse in the tier below.

(5) On all scaffolds arranged in tiers, the legs shall be nailed down to the planks to prevent displacement or thrust and each tier shall be substantially cross braced.

TABLE D–19

MINIMUM DIMENSIONS FOR HORSE SCAFFOLD MEMBER

Members:	Dimensions (inches)
Horizontal members or bearers	3 by 4
Legs	1 1/4 by 4 1/2
Longitudinal brace between legs	1 by 6
Gusset brace at top of legs	1 by 8
Half diagonal braces	1 1/4 by 4 1/2

(6) Horses or parts which have become weak or defective shall not be used.

(7) Guardrails not less than 2 by 4 inches or the equivalent and not less than 36 inches or more than 42

inches high with a mid–rail, when required, of 1– by 4–inch lumber or equivalent and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82527, filed 7/31/79; Order 73–5, § 296–24–82527, filed 5/9/73 and Order 73–4, § 296–24–82527, filed 5/7/73.]

WAC 296–24–82529 Needle beam scaffold. (1) Wood needle beams shall be in accordance with WAC 296–24–82503 (5) and (9) and shall be not less than 4 by 6 inches in size, with the greater dimension placed in a vertical direction. Metal beams or the equivalent conforming to WAC 296–24–82503 (4) and (8) may be used.

(2) Ropes or hangers shall be provided for supports. The span between supports on the needle beam shall not exceed 10 feet for 4– by 6–inch timbers. Rope supports shall be equivalent in strength to 1–inch diameter first–grade manila rope.

(3) The ropes shall be attached to the needle beams by a scaffold hitch or a properly made eye splice. The loose end of the rope shall be tied by a bowline knot or by a round turn and one–half hitch.

(4) The platform span between the needle beams shall not exceed 8 feet when using 2–inch scaffold plank. For spans greater than 8 feet, platforms shall be designed based on design requirements for the special span. The overhang of each end of the platform planks shall be not less than 1 foot and not more than 18 inches.

(5) When one needle beam is higher than the other or when the platform is not level the platform shall be secured against slipping.

(6) All unattached tools, bolts, and nuts used on needle beam scaffolds shall be kept in suitable containers.

(7) One end of a needle beam scaffold may be supported by a permanent structural member conforming to WAC 296–24–82503 (4) and (8).

(8) Each man working on a needle beam scaffold 10 feet or more above the ground or floor, shall be protected by a safety life belt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the workman in case of a fall.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82529, filed 7/31/79; Order 73–5, § 296–24–82529, filed 5/9/73 and Order 73–4, § 296–24–82529, filed 5/7/73.]

WAC 296–24–82531 Plasterers', decorators', and large area scaffolds. (1) Plasterers', decorators', lathers', and ceiling workers' inside scaffolds shall be constructed in accordance with the general requirements set forth for independent wood pole scaffolds.

(2) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of 1– by 4–inch nominal lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

(3) All platform planks shall be laid with the edges close together to the point where material cannot fall through.

(4) When independent pole scaffold platforms are erected in sections such sections shall be provided with connecting runways equipped with substantial guardrails.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82531, filed 7/31/79; Order 73–5, § 296–24–82531, filed 5/9/73 and Order 73–4, § 296–24–82531, filed 5/7/73.]

WAC 296–24–82533 Interior hung scaffolds. (1) An interior hung scaffold should be hung or suspended from the roof structure or substantial ceiling beams.

(2) The suspended steel wire rope shall conform to WAC 296–24–82503(22). Wire may be used providing the strength requirements of WAC 296–24–82503(22) are met.

(3) For hanging wood scaffolds, the following minimum nominal size material is recommended:

(a) Supporting bearers 2 by 9 inches on edge.

(b) Planking 2 by 9 inches or 2 by 10 inches, with maximum span 7 feet for heavy duty and 10 feet for light duty or medium duty.

(4) Steel tube and coupler members may be used for hanging scaffolds with both types of scaffold designed to sustain a uniform distributed working load up to heavy duty scaffold loads with a safety factor of four.

(5) When a hanging scaffold is supported by means of wire rope, such wire rope shall be wrapped at least twice around the supporting members and twice around the bearers of the scaffold, with each end of the wire rope secured by at least three standard wire–rope clips.

(6) All overhead supporting members shall be inspected and checked for strength before the scaffold is erected.

(7) Guardrails not less than 2 by 4 inches nominal lumber or the equivalent and not less than 36 inches or more than 42 inches high, with a mid–rail, when required, of at least 1– by 4–inch lumber or equivalent, and toeboards, shall be installed at all open sides on all scaffolds more than 10 feet above the ground or floor. Toeboards shall be a minimum of 4 inches nominal lumber in height. Wire mesh shall be installed in accordance with WAC 296–24–82503(17).

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–82533, filed 7/31/79; Order 73–5, § 296–24–82533, filed 5/9/73 and Order 73–4, § 296–24–82533, filed 5/7/73.]

WAC 296–24–82535 Ladder–jack scaffolds. (1) All ladder–jack scaffolds shall be limited to light duty and shall not exceed a height of 20 feet above the floor or ground.

(2) All ladders used in connection with ladder–jack scaffolds shall be heavy–duty ladders and shall be designed and constructed in accordance with WAC 296–24–780 through 296–24–78009 and 296–24–795 through 296–24–79507.

(3) The ladder–jack shall be so designed and constructed that it will bear on the side rails in addition to the ladder rungs, or if bearing on rungs only, the bearing area shall be at least 10 inches on each rung.

(4) Ladders used in conjunction with ladder jacks shall be so placed, fastened, held, or equipped with devices so as to prevent slipping.

(5) The wood platform planks shall be not less than 2 inches nominal in thickness. Both metal and wood platform planks shall overlap the bearing surface not less than 12 inches. The span between supports for wood shall not exceed 8 feet. Platform width shall be not less than 18 inches.

(6) Not more than two persons shall occupy any given 8 feet of any ladder–jack scaffold at any one time.

[Order 73–5, § 296–24–82535, filed 5/9/73 and Order 73–4, § 296–24–82535, filed 5/7/73.]

WAC 296–24–82537 Window–jack scaffolds. (1) Window–jack scaffolds shall be used only for the purpose of working at the window opening through which the jack is placed.

(2) Window jacks shall not be used to support planks placed between one window jack and another or for other elements of scaffolding.

(3) Window–jack scaffolds shall be provided with suitable guardrails unless safety belts with lifelines are attached and provided for the workman. Window–jack scaffolds shall be used by one man only.

[Order 73–5, § 296–24–82537, filed 5/9/73 and Order 73–4, § 296–24–82537, filed 5/7/73.]

WAC 296–24–82539 Roofing brackets. (1) Roofing brackets shall be constructed to fit the pitch of the roof.

(2) Brackets shall be secured in place by nailing in addition to the pointed metal projections. The nails shall be driven full length into the roof. When rope supports are used, they shall consist of first–grade manila of at least three–quarter–inch diameter, or equivalent.

(3) A substantial catch platform shall be installed below the working area of roofs more than 20 feet from the ground to eaves with a slope greater than 3 inches in 12 inches without a parapet. In width the platform shall extend 2 feet beyond the projection of the eaves and shall be provided with a safety rail, mid–rail, and toeboard. This provision shall not apply where employees engaged in work upon such roofs are protected by a safety belt attached to a lifeline.

[Order 73–5, § 296–24–82539, filed 5/9/73 and Order 73–4, § 296–24–82539, filed 5/7/73.]

WAC 296–24–82541 Crawling boards or chicken ladders. (1) Crawling boards shall be not less than 10 inches wide and 1 inch thick, having cleats 1 x 1 1/2 inches. The cleats shall be equal in length to the width of the board and spaced at equal intervals not to exceed 24 inches. Nails shall be driven through and clinched on the underside. The crawling board shall extend from the ridge pole to the eaves when used in connection with roof construction, repair, or maintenance.

(2) A firmly fastened lifeline of at least three–quarter–inch rope shall be strung beside each crawling board for a handhold.

(3) Crawling boards shall be secured to the roof by means of adequate ridge hooks or equivalent effective means.

[Order 73–5, § 296–24–82541, filed 5/9/73 and Order 73–4, § 296–24–82541, filed 5/7/73.]

WAC 296–24–82543 Float or ship scaffolds. (1) Float or ship scaffolds shall support not more than three men and a few light tools, such as those needed for riveting, bolting, and welding. They shall be constructed in accordance with WAC 296–24–82543 (2) through (6), unless substitute designs and materials provide equivalent strength, stability, and safety.

(2) The platform shall be not less than 3 feet wide and 6 feet long, made of three–quarter–inch plywood, equivalent to American Plywood Association Grade B–B, Group I, Exterior.

(3) Under the platform, there shall be two supporting bearers made from 2– x 4–inch, or 1– x 10–inch rough, selected lumber, or better. They shall be free of knots or other flaws and project 6 inches beyond the platform on both sides. The ends of the platform shall extend about 6 inches beyond the outer edges of the bearers. Each bearer shall be securely fastened to the platform.

(4) An edging of wood not less than 3/4 x 1 1/2 inches, or equivalent, shall be placed around all sides of the platform to prevent tools from rolling off.

(5) Supporting ropes shall be 1–inch diameter manila rope or equivalent, free from deterioration, chemical damage, flaws, or other imperfections. Rope connections shall be such that the platform cannot shift or slip. If two ropes are used with each float, they should be arranged so as to provide four ends which are to be securely fastened to an overhead support. Each of the two supporting ropes shall be hitched around one end of a bearer and pass under the platforms to the other end of the bearer where it is hitched again, leaving sufficient rope at each end for the supporting ties.

(6) Each workman shall be protected by a safety lifebelt attached to a lifeline. The lifeline shall be securely attached to substantial members of the structure (not scaffold), or to securely rigged lines, which will safely suspend the workman in case of a fall.

[Order 73–5, § 296–24–82543, filed 5/9/73 and Order 73–4, § 296–24–82543, filed 5/7/73.]

WAC 296–24–82545 Scope. WAC 296–24–82501 through 296–24–82543 establish safety requirements for the construction, operation, maintenance, and use of scaffolds used in the construction, alteration, demolition, and maintenance of buildings and structures.

[Order 73–5, § 296–24–82545, filed 5/9/73 and Order 73–4, § 296–24–82545, filed 5/7/73.]

WAC 296-24-840 Manually propelled mobile ladder stands and scaffolds (towers).

[Order 73-5, § 296-24-840, filed 5/9/73 and Order 73-4, § 296-24-840, filed 5/7/73.]

WAC 296-24-84001 Definitions. The following terms shall have the meaning ascribed in this section when referred to in WAC 296-24-84003 through 296-24-84013 unless the context requires otherwise.

(1) Bearer. A horizontal member of a scaffold upon which the platform rests and which may be supported by ledgers.

(2) Brace. A tie that holds one scaffold member in a fixed position with respect to another member.

(3) Climbing ladder. A separate ladder with equally spaced rungs usually attached to the scaffold structure for climbing and descending.

(4) Coupler. A device for locking together the components of a tubular metal scaffold which shall be designed and used to safely support the maximum intended loads.

(5) Design working load. The maximum intended load, being the total of all loads including the weight of the men, materials, equipment, and platform.

(6) Equivalent. Alternative design or features, which will provide an equal degree or factor of safety.

(7) Guardrail. A barrier secured to uprights and erected along the exposed sides and ends of platforms to prevent falls of persons.

(8) Handrail. A rail connected to a ladder stand running parallel to the slope and/or top step.

(9) Ladder stand. A mobile fixed size self-supporting ladder consisting of a wide flat tread ladder in the form of stairs. The assembly may include handrails.

(10) Ledger (stringer). A horizontal scaffold member which extends from post to post and which supports the bearer forming a tie between the posts.

(11) Mobile scaffold (tower). A light, medium, or heavy duty scaffold mounted on casters or wheels.

(12) Mobile. "Manually propelled."

(13) Mobile work platform. Generally a fixed work level one frame high on casters or wheels, with bracing diagonally from platform to vertical frame.

(14) Runner. The lengthwise horizontal bracing and/or bearing members.

(15) Scaffold. Any temporary elevated platform and its necessary vertical, diagonal, and horizontal members used for supporting workmen and materials. (Also known as a scaffold tower.)

(16) Toeboard. A barrier at platform level erected along the exposed sides and ends of a scaffold platform to prevent falls of materials.

(17) Tube and coupler scaffold. An assembly consisting of tubing which serves as posts, bearers, braces, ties, and runners, a base supporting the posts, and uprights, and serves to join the various members, usually used in fixed locations.

(18) Tubular welded frame scaffold. A sectional, panel, or frame metal scaffold substantially built up of prefabricated welded sections, which consist of posts and bearers with intermediate connecting members and braced with diagonal or cross braces.

(19) Tubular welded sectional folding scaffold. A sectional, folding metal scaffold either of ladder frame or inside stairway design, substantially built of prefabricated welded sections, which consist of end frames, platform frame, inside inclined stairway frame and braces, or hinged connected diagonal and horizontal braces, capable of being folded into a flat package when the scaffold is not in use.

(20) Work level. The elevated platform, used for supporting workmen and their materials, comprising the necessary vertical, horizontal, and diagonal braces, guardrails, and ladder for access to the work platform.

[Order 73-5, § 296-24-84001, filed 5/9/73 and Order 73-4, § 296-24-84001, filed 5/7/73.]

WAC 296-24-84003 General requirements. (1) Application. This section is intended to prescribe rules and requirements for the design, construction, and use of mobile work platforms (including ladder stands but not including aerial ladders) and rolling (mobile) scaffolds (towers). This standard is promulgated to aid in providing for the safety of life, limb, and property, by establishing minimum standards for structural design requirements and for the use of mobile work platforms and towers.

(2) Working loads.

(a) Work platforms and scaffolds shall be capable of carrying the design load under varying circumstances depending upon the conditions of use. Therefore, all parts and appurtenances necessary for their safe and efficient utilization must be integral parts of the design.

(b) Specific design and construction requirements are not a part of this section because of the wide variety of materials and design possibilities. However, the design shall be such as to produce a mobile ladder stand or scaffold that will safely sustain the specified loads. The material selected shall be of sufficient strength to meet the test requirements and shall be protected against corrosion or deterioration.

(i) The design working load of ladder stands shall be calculated on the basis of one or more 200-pound persons together with 50 pounds of equipment each.

(ii) The design load of all scaffolds shall be calculated on the basis of:

Light—Designed and constructed to carry a working load of 25 pounds per square foot.

Medium—Designed and constructed to carry a working load of 50 pounds per square foot.

Heavy—Designed and constructed to carry a working load of 75 pounds per square foot.

All ladder stands and scaffolds shall be capable of supporting at least four times the design working load.

(c) Materials used in mobile ladder stands and scaffolds shall be of standard manufacture and conform to specifications of this section for strength, dimensions, and weights, and shall be selected to safely support the design working load.

(d) Nails, bolts, or other fasteners used in the construction of ladders, scaffolds, and towers shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the unit. Nails shall

be driven full length. (All nails should be immediately withdrawn from dismantled lumber.)

(e) All exposed surfaces shall be free from sharp edges, burrs or other safety hazards.

(3) Work levels.

(a) The maximum work level height shall not exceed four times the minimum or least base dimension of any mobile ladder stand or scaffold. Where the basic mobile unit does not meet this requirement, suitable outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping.

(b) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches.

(c) The supporting structure for the work level shall be rigidly braced, using adequate cross bracing or diagonal bracing with rigid platforms at each work level.

(d) The steps of ladder stands shall be fabricated from slip resistant treads.

(e) The work level platform of scaffolds (towers) shall be of wood, aluminum, or plywood planking, steel or expanded metal, for the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. All planking shall be 2–inch (nominal) scaffold grade minimum 1,500 f. (stress grade) construction grade lumber or equivalent.

(f) All scaffold work levels 10 feet or higher above the ground or floor shall have a standard (4–inch nominal) toeboard.

(g) All work levels 10 feet or higher above the ground or floor shall have a guardrail of 2– by 4–inch nominal lumber or the equivalent installed no less than 36 inches or more than 42 inches high, with a mid–rail, when required, of at least 1– by 4–inch nominal lumber or equivalent.

(h) A climbing ladder, stairway, or equivalent shall be provided for proper access and egress, and shall be affixed or built into the scaffold and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not to exceed 30 feet.

(4) Wheels or casters.

(a) Wheels or casters shall be properly designed for strength and dimensions to support four times the design working load.

(b) All scaffold casters shall be provided with a positive wheel and/or swivel lock to prevent movement. Ladder stands shall have at least two of the four casters and shall be of the swivel type.

(c) Where leveling of the elevated work platform is required, screw jacks or other suitable means for adjusting the height shall be provided in the base section of each mobile unit.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79–08–115 (Order 79–9), § 296–24–84003, filed 7/31/79; Order 73–5, § 296–24–84003, filed 5/9/73 and Order 73–4, § 296–24–84003, filed 5/7/73.]

WAC 296–24–84005 Mobile tubular welded frame scaffolds. (1) General. Units shall be designed to comply with the requirements of WAC 296–24–84003.

(2) Bracing. Scaffolds shall be properly braced by cross braces and/or diagonal braces for securing vertical members together laterally. The cross braces shall be of a length that will automatically square and align vertical members so the erected scaffold is always plumb, square, and rigid.

(3) Spacing. Spacing of panels or frames shall be consistent with the loads imposed. The frames shall be placed one on top of the other with coupling or stacking pins to provide proper vertical alignment of the legs.

(4) Locking. Where uplift may occur, panels shall be locked together vertically by pins or other equivalent means.

(5) Erection. Only the manufacturer of a scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a registered professional engineer or erected in accordance with instructions furnished by the manufacturer.

[Order 73–5, § 296–24–84005, filed 5/9/73 and Order 73–4, § 296–24–84005, filed 5/7/73.]

WAC 296–24–84007 Mobile tubular welded sectional folding scaffolds. (1) General. Units including sectional stairway and sectional ladder scaffolds shall be designed to comply with the requirements of WAC 296–24–84003.

(2) Stairway. An integral stairway and work platform shall be incorporated into the structure of each sectional folding stairway scaffold.

(3) Bracing. An integral set of pivoting and hinged folding diagonal and horizontal braces and a detachable work platform shall be incorporated into the structure of each sectional folding ladder scaffold.

(4) Sectional folding stairway scaffolds. Sectional folding stairway scaffolds shall be designed as medium duty scaffolds except for high clearance. These special base sections shall be designed as light duty scaffolds. When upper sectional folding stairway scaffolds are used with a special high clearance base, the load capacity of the entire scaffold shall be reduced accordingly. The width of a sectional folding stairway scaffold shall not exceed 4 1/2 feet. The maximum length of a sectional folding stairway scaffold shall not exceed 6 feet.

(5) Sectional folding ladder scaffolds. Sectional folding ladder scaffolds shall be designed as light duty scaffolds including special base (open end) sections which are designed for high clearance. For certain special applications the six–foot folding ladder scaffolds, except for special high clearance base sections, shall be designed for use as medium duty scaffolds. The width of a sectional folding ladder scaffold shall not exceed 4 1/2 feet. The maximum length of a sectional folding ladder scaffold shall not exceed 6 feet 6 inches for a six–foot long unit, 8 feet 6 inches for an eight–foot unit or 10 feet 6 inches for a ten–foot long unit.

(6) End frames. The end frames of sectional ladder and stairway scaffolds shall be designed so that the horizontal bearers provide supports for multiple planking levels.

(7) Erection. Only the manufacturer of the scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements in this section.

[Order 73-5, § 296-24-84007, filed 5/9/73 and Order 73-4, § 296-24-84007, filed 5/7/73.]

WAC 296-24-84009 Mobile tube and coupler scaffolds. (1) Design. Units shall be designed to comply with the applicable requirements of WAC 296-24-84003.

(2) Material. The material used for the couplers shall be of a structural type, such as a drop-forged steel, malleable iron or structural grade aluminum. The use of gray cast iron is prohibited.

(3) Erection. Only the manufacturer of the scaffold or his qualified designated agent shall be permitted to erect or supervise the erection of scaffolds exceeding 50 feet in height above the base, unless such structure is approved in writing by a licensed professional engineer, or erected in accordance with instructions furnished by the manufacturer to comply with requirements in this section.

[Order 73-5, § 296-24-84009, filed 5/9/73 and Order 73-4, § 296-24-84009, filed 5/7/73.]

WAC 296-24-84011 Mobile work platforms. (1) Design. Units shall be designed for the use intended and shall comply with the requirements of WAC 296-24-84003.

(2) Base width. The minimum width of the base of mobile work platforms shall not be less than 20 inches.

(3) Bracing. Adequate rigid diagonal bracing to vertical members shall be provided.

[Order 73-5, § 296-24-84011, filed 5/9/73 and Order 73-4, § 296-24-84011, filed 5/7/73.]

WAC 296-24-84013 Mobile ladder stands. (1) Design. Units shall comply with applicable requirements of WAC 296-24-84003.

(2) Base width. The minimum base width shall conform to WAC 296-24-84003 (3) and (a). The maximum length of the base section shall be the total length of combined steps and top assembly, measured horizontally, plus five-eighths inch per step of rise.

(3) Steps. Steps shall be uniformly spaced, and sloped, with a rise of not less than nine inches, nor more than ten inches, and a depth of not less than seven inches. The slope of the steps section shall be a minimum of fifty-five degrees and a maximum of sixty degrees measured from the horizontal.

(4) Handrails.

(a) Units having more than five steps or 60 inches vertical height to the top step shall be equipped with handrails.

(b) Handrails shall be a minimum of 29 inches high. Measurements shall be taken vertically from the center of the step.

(5) Loading. The load (see WAC 296-24-84003 (2)(b)(ii)) shall be applied uniformly to a 3 1/2 inches wide area front to back at the center of the width span with a safety factor of four.

[Order 73-5, § 296-24-84013, filed 5/9/73 and Order 73-4, § 296-24-84013, filed 5/7/73.]

WAC 296-24-855 Other working surfaces.

[Order 73-5, § 296-24-855, filed 5/9/73 and Order 73-4, § 296-24-855, filed 5/7/73.]

WAC 296-24-85501 Dockboards (bridge plates). (1) Portable and powered dockboards shall be strong enough to carry the load imposed on them.

(2) Portable dockboards shall be secured in position, either by being anchored or equipped with devices which will prevent their slipping.

(3) Powered dockboards shall be designed and constructed in accordance with Commercial Standard CS202-56 (1961) "Industrial Lifts and Hinged Loading Ramps" published by the U.S. Department of Commerce.

(4) Handholds, or other effective means, shall be provided on portable dockboards to permit safe handling.

(5) Positive protection shall be provided to prevent railroad cars from being moved while dockboards or bridge plates are in position.

[Order 73-5, § 296-24-85501, filed 5/9/73 and Order 73-4, § 296-24-85501, filed 5/7/73.]

WAC 296-24-85503 Forging machine area. (1) Machines shall be so located as to give (a) enough clearance between machines so that the movement of one operator will not interfere with the work of another, (b) ample room for cleaning machines and handling the work, including material and scrap. The arrangement of machines shall be such that operators will not stand in aisles.

(2) Aisles shall be provided of sufficient width to permit the free movement of employees bringing and removing material. This aisle space is to be independent of working and storage space and should be defined by marking.

(3) Wood platforms used on the floor in front of machines shall be substantially constructed with nonslip surfaces.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-24-85503, filed 7/31/79; Order 73-5, § 296-24-85503, filed 5/9/73 and Order 73-4, § 296-24-85503, filed 5/7/73.]

WAC 296-24-85505 Veneer machinery. (1) Sides of steam vats shall extend to a height of not less than 36 inches above the floor, working platform, or ground.

(2) Large steam vats divided into sections shall be provided with substantial walkways between sections. Each walkway shall be provided with a standard handrail on each exposed side. These handrails may be removable, if necessary.

(3) Covers shall be removed only from that portion of steaming vats on which men are working and a portable railing shall be placed at this point to protect the operators.

(4) Workman shall not ride or step on logs in steam vats.

[Order 73-5, § 296-24-85505, filed 5/9/73 and Order 73-4, § 296-24-85505, filed 5/7/73.]

Part J-2
POWERED PLATFORMS, ETC.

WAC

296-24-870 Power platforms for exterior building maintenance.
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296-24-87003 General requirements.
296-24-87005 Type F powered platforms.
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296-24-87009 Inspections and tests.
296-24-885 Vehicle-mounted elevating and rotating work platforms.
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WAC 296-24-870 Power platforms for exterior building maintenance.

[Order 73-5, § 296-24-870, filed 5/9/73 and Order 73-4, § 296-24-870, filed 5/7/73.]

WAC 296-24-87001 Definitions. (1) Angulated roping. A system of platform suspension in which the upper wire rope sheaves or suspension points are closer to the plane of the building face than the corresponding attachment points on the platform, thus causing the platform to press against the face of the building during its vertical travel.

(2) ANSI. American National Standards Institute.

(3) Babbitted fastenings. The method of providing wire rope attachments in which the ends of the wire strands are bent back and are held in a tapered socket by means of poured molten babbitt metal.

(4) Brake-disc type. A brake in which the holding effect is obtained by frictional resistance between one or more faces of discs keyed to the rotating member to be held and fixed discs keyed to the stationary or housing member (pressure between the discs being applied axially).

(5) Brake-self-energizing band type. An essentially unidirectional brake in which the holding effect is obtained by the snubbing action of a flexible band wrapped about a cylindrical wheel or drum affixed to the rotating member to be held, the connections and linkages being so arranged that the motion of the brake wheel or drum will act to increase the tension or holding force of the band.

(6) Brake-shoe type. A brake in which the holding effect is obtained by applying the direct pressure of two or more segmental friction elements held to a stationary member against a cylindrical wheel or drum affixed to the rotating member to be held.

(7) Building face rollers. A specialized form of guide roller designed to contact a portion of the outer face or wall structure of the building, and to assist in stabilizing the operators' platform during vertical travel.

(8) Continuous pressure. Operation by means of buttons or switches, any one of which may be used to control the movement of the working platform or roof car, only as long as the button or switch is manually maintained in the actuating position.

(9) Control. A system governing starting, stopping, direction, acceleration, speed, and retardation of moving members.

(10) Controller. A device or group of devices, usually contained in a single enclosure, which serves to control in some predetermined manner the apparatus to which it is connected.

(11) Electrical ground. A conducting connection between an electrical circuit or equipment and the earth, or some conducting body which serves in place of the earth.

(12) Guide roller. A rotating, bearing-mounted, generally cylindrical member, operating separately or as part of a guide shoe assembly, attached to the platform, and providing rolling contact with building guideways, or other building contact members.

(13) Guide shoe. An assembly of rollers, slide members, or the equivalent, attached as a unit to the operators' platform, and designed to engage with the building members provided for the vertical guidance of the operators' platform.

(14) Interlock. A device actuated by the operation of some other device with which it is directly associated, to govern succeeding operations of the same or allied devices.

(15) Operating device. A pushbutton, lever, or other manual device used to actuate a control.

(16) Powered platform. Equipment to provide access to the exterior of a building for maintenance, consisting of a suspended power-operated working platform, a roof car, or other suspension means, and the requisite operating and control devices.

(17) Rated load. The combined weight of employees, tools, equivalent, and other material which the working platform is designed and installed to lift.

(18) Relay, direction. An electrically energized contactor responsive to an initiating control circuit, which in turn causes a moving member to travel in a particular direction.

(19) Relay, potential for vertical travel. An electrically energized contactor responsive to initiating control circuit, which in turn controls the operation of a moving member in both directions. This relay usually operates in conjunction with direction relays, as covered under the definition "relay direction."

(20) Roof car. A structure for the suspension of a working platform, providing for its horizontal movement to working positions.

(21) Roof–powered platform. A powered platform having the raising and lowering mechanism located on a roof car.

(22) Self–powered platform. A powered platform having the raising and lowering mechanism located on the working platform.

(23) Traveling cable. A cable made up of electrical or communication conductors or both, and providing electrical connection between the working platform and the roof car or other fixed point.

(24) Weatherproof. Equipment so constructed or protected that exposure to the weather will not interfere with its proper operation.

(25) Working platform. The suspended structure arranged for vertical travel which provides access to the exterior of the building or structure.

(26) Yield point. The stress at which the material exhibits a permanent set of 0.2 percent.

(27) Zinced fastenings. The method of providing wire rope attachments in which the splayed or fanned wire ends are held in a tapered socket by means of poured molten zinc.

[Order 73-5, § 296-24-87001, filed 5/9/73 and Order 73-4, § 296-24-87001, filed 5/7/73.]

WAC 296-24-87003 General requirements. (1) Application.

(a) These standards establish safety requirements for the design, construction, installation, operation, maintenance, inspection, and use of power–operated platforms for exterior building maintenance. The requirements of these standards do not apply to temporary equipment used for construction work; or to devices which are raised and lowered manually.

(b) The purpose of these standards is to provide for the safety of life and limb of users of exterior powered platforms, as well as of others who may be exposed. The equipment described in WAC 296-24-87001 through 296-24-87009 is intended for use by one or more workmen who are engaged in exterior work, such as window cleaning, caulking, metal–polishing, and general exterior building maintenance or repairs.

(2) Existing and new equipment. These standards apply to all powered platforms installed subsequent to August 27, 1971, with the exception of powered platforms installed for emergency purposes.

(3) Design requirements. All new powered platforms for exterior building maintenance purchased and used after August 27, 1971, shall meet all of the design, construction, installation, and maintenance requirements of Part II and III of the "American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance ANSI A120.1–1970" and of these sections. (Reference shall be made to appropriate parts of ANSI A120.1–1970 for detail specifications for equipment and special installations.)

(4) Limitation. The requirements of these standards apply only to electric powered platforms. It is not the intent of this section to prohibit the use of other types of power. Installation of powered platforms using other types of power is permitted, provided such platforms have adequate protective devices for the type of power used, and otherwise provide for reasonable safety of life and limb to users of equipment and to others who may be exposed.

(5) Types of powered platforms.

(a) For the purpose of applying this standard, powered platforms are divided into two basic types, Type F and Type T.

(b) Powered platforms designated as Type F shall meet all of the requirements of WAC 296-24-87003(3). A basic requirement of Type F equipment is that the work platform is suspended by at least four wire ropes and designed so that failure of any one wire rope will not substantially alter the normal position of the working platform. Another basic requirement of Type F equipment is that only one layer of hoisting rope is permitted on winding drums. Type F powered platforms may be either roof–powered of self–powered.

(c) Powered platforms designated as Type T shall meet all the requirements of WAC 296-24-87003(3). A basic requirement of Type T equipment is that the working platform is suspended by at least two wire ropes. Failure of one wire rope would not permit the working platform to fall to the ground, but would upset its normal position. The employer shall require employees working on Type T equipment to wear safety belts, which are attached by lifelines to either the working platform or the building structure. Type T powered platform may be either roof–powered or self–powered.

(d) The requirements of these standards apply to powered platforms with winding drum type hoisting machines. It is not the intent of these standards to prohibit powered platforms using other types of hoisting machines such as, but not limited to, traction drum hoisting machines, air powered machines, hydraulic powered machines, and internal combustion machines. Installation of powered platforms with other types of hoisting machines is permitted, provided adequate protective devices are used, and provided reasonable safety of life and limb to users of the equipment and to others who may be exposed is assured.

[Order 76-6, § 296-24-87003, filed 3/1/76; Order 73-5, § 296-24-87003, filed 5/9/73 and Order 73-4, § 296-24-87003, filed 5/7/73.]

WAC 296-24-87005 Type F powered platforms. (1) Roof car, general.

(a) A roof car shall be provided whenever it is necessary to move the working platform horizontally to working or storage positions.

(b) The maximum rated speed at which a power traversed roof car may be moved in a horizontal direction shall be 50 feet per minute.

(2) Movement and positioning of roof car.

(a) Provision shall be made to protect against having the roof car leave the roof or enter roof areas not designed for travel.

(b) The horizontal motion of the roof cars shall be positively controlled so as to insure proper movement and positioning of the roof car.

(c) Roof car positioning devices shall be provided to insure that the working platform is placed and retained in proper position for vertical travel and during storage.

(d) Mechanical stops shall be provided to prevent the traversing of the roof car beyond its normal limits of travel. Such stops shall be capable of withstanding a force equal to 100 percent of the inertial effect of the roof car in motion with traversing power applied.

(e) The operating device of a power–operated roof car for traversing shall be located on the roof car, the working platform, or both, and shall be of the continuous pressure weatherproof electric type. If more than one operating device is provided, they shall be so arranged that traversing is possible only from one operating device at a time.

(i) The operating device shall be so connected that it is not operable until:

(A) The working platform is located at its uppermost position of travel and is not in contact with the building face or fixed vertical guides in the face of the building; and

(B) All protective devices and interlocks are in a position for traversing.

(3) Roof car stability. Roof car stability shall be determined by either WAC 296–24–87005 (3)(a) or (b) whichever is greater.

(a) The roof car shall be continuously stable, considering overturning moment as determined by 125 percent rated load, plus maximum dead load and the prescribed wind loading.

(b) The roof car and its anchorages shall be capable of resisting accidental over–tensioning of the wire ropes suspending the working platform and this calculated value shall include the effect of one and one–half times the value. For this calculation, the simultaneous effect of one–half wind load shall be included, and the design stresses shall not exceed those referred to in WAC 296–24–87003(3).

(c) If the load on the motors is at any time in excess of three times that required for lifting the working platform with its rated load, the motor shall stall.

(4) Access to the roof car. Safe access to the roof car and from the roof car to the working platform shall be provided. If the access to the roof car at any point of its travel is not over the roof area or where otherwise necessary for safety, self–closing, self–locking gates shall be provided. Applicable provisions of the American National Standard Safety Requirements for Floor and Wall Openings, Railings and Toeboard, A12.1–1967, shall apply.

(5) Means for maintenance, repair, and storage. Means shall be provided to run the roof car away from the roof perimeter, where necessary, and to provide a safe area for maintenance, repairs, and storage. Provisions shall be made to secure the machine in the stored position. (For stored machines subject to wind forces, see special design and anchorage requirements for "wind forces" in Part II, section 10.5.1.1 of ANSI A120.1–1970, American National Standards Safety Requirements for Powered Platforms for Exterior Building Maintenance.)

(6) General requirements for working platforms. The working platform shall be of girder or truss construction and shall be adequate to support its rated load under any position of loading, and comply with the provisions set forth in WAC 296–24–87003(3).

(7) Load rating plate. Each working platform shall bear a manufacturer's load rating plate, conspicuously posted; stating the maximum permissible rated load. Load rating plates shall be made of noncorrosive material and shall have letters and figures stamped, etched, or cast on the surface. The minimum height of the letters and figures shall be one–fourth inch.

(8) Minimum size. The working platform shall have a minimum net width of 24 inches.

(9) Guard rails. Working platforms shall be furnished with permanent guard rails not less than 36 inches high, and not more than 42 inches high at the front (building side). At the rear, and on the sides, the rail shall not be less than 42 inches high. An intermediate guardrail shall be provided around the entire platform between the top guardrail and the toeboard.

(10) Toeboards. A 4–inch toeboard shall be provided along all sides of the working platform.

(11) Open spaces between guardrails and toeboards. The spaces between the intermediate guardrail and platform toeboard on the building side of the working platform, and between the top guardrail and the toeboard on other sides of the platform, shall be filled with metallic mesh or similar material that will reject a ball 1 inch in diameter. The installed mesh shall be capable of withstanding a load of 100 pounds applied horizontally over any area of 144 square inches. If the space between the platform and the building face does not exceed 8 inches, and the platform is restrained by guides, the mesh may be omitted on the front side.

(12) Flooring. The platform flooring shall be of the nonskid type, and if of open construction, shall reject a 9/16–inch diameter ball, or be provided with a screen below the floor to reject a 9/16–inch diameter ball.

(13) Access gates. Where access gates are provided, they shall be self–closing and self–locking.

(14) Operating device for vertical movement of the working platform.

(a) The normal operating device for the working platform shall be located on the working platform and shall be of the continuous pressure weatherproof electric type.

(b) The operating device shall be operable only when all electrical protective devices and interlocks on the working platform are in position for normal service, and the roof car, if provided, is at an established operating point.

(15) Emergency electric operative device.

(a) In addition, on roof–powered platforms, an emergency electric operating device shall be provided near the hoisting machine for use in the event of failure of the normal operating device for the working platform, or failure of the traveling cable system. The emergency operating device shall be mounted in a locked compartment and shall have a legend mounted thereon reading: "For emergency operation only. Establish communication with personnel on working platform before use."

(b) A key for unlocking the compartment housing the emergency operating device shall be mounted in a break–glass receptacle located near the emergency operating device.

(16) Manual cranking for emergency operation. Emergency operation of the maindrive machine may be provided to allow manual cranking. This provision for manual operation shall be designed so that not more than two persons will be required to perform this operation. The access to this provision shall include a means to automatically make the machine inoperative electrically while under the emergency manual operation. The design shall be such that the emergency brake is operative at or below governor tripping speed during manual operation.

(17) Arrangement and guarding of hoisting equipment.

(a) Hoisting equipment shall consist of a power–driven drum or drum contained in the roof car (roof–powered platforms) or contained on the working platform (self–powered platform).

(b) The hoisting equipment shall be power–operated in both up and down directions.

(c) Guard or other protective devices shall be installed wherever rotating shafts or other mechanisms or gears may expose personnel to a hazard.

(d) Friction devices or clutches shall not be used for connecting the main driving mechanism to the drum or drums. Belt–or chain–driven machines are prohibited.

(18) Hoisting motors.

(a) Hoisting motors shall be electric and of weatherproof construction.

(b) Hoisting motors shall be in conformance with applicable provisions of WAC 296–24–87005(22), electrical wiring and equipment.

(c) Hoisting motors shall be directly connected to the hoisting machinery. Motor couplings, if used, shall be of steel construction.

(19) Brakes. The hoisting machine(s) shall have two independent braking means, each designed to stop and hold the working platform with 125 percent of rated load.

(20) Hoisting ropes and rope connections.

(a) Working platforms shall be suspended by wire ropes of either 6x19 or 6x37 classification, preformed or nonpreformed.

(b) The minimum grade of the wire rope shall be improved plow steel. Ropes shall be fabricated of drawn galvanized or bright wire. Drawn galvanized wire rope shall be fabricated of individual wires on which the zinc coating has been applied at an intermediate size, and the wire then drawn to finished size and to the same tolerances and with the same mechanical properties as for uncoated wire of equal grade.

(c) The minimum factor of safety shall be ten, and shall be calculated by the following formula:

$$F = \frac{SxN}{W}$$

where

S = Manufacturer's rated breaking strength of one rope.

N = Number of ropes under load.

W = Maximum static load on all ropes with the platform and its rated load at any point of its travel.

(d) Hoisting ropes shall be sized to conform with the required factor of safety, but in no case shall the size be less than five–sixteenths–inch diameter.

(e) Winding drums shall have at least three turns of rope remaining when the platform has landed at the lowest possible point of its travel.

(f) The lengthening or repairing of wire rope by the joining of two or more lengths is prohibited.

(g) The nondrum ends of the hoisting ropes shall be provided with individual shackle rods which will permit individual adjustment of rope lengths, if required.

(h) Reverse bends in rope arrangement should be avoided. More than two reverse bends in each rope is prohibited.

(21) Rope tag data.

(a) A metal data tag shall be securely attached to one of the wire rope fastenings. This data tag shall bear the following wire rope data:

(i) The diameter in inches.

(ii) Construction classification.

(iii) Whether nonpreformed or preformed.

(iv) The grade of material used.

(v) The manufacturer's rated breaking strength.

(vi) Name of the manufacturer of the rope.

(vii) The month and year the ropes were installed.

(viii) Name of the person or firm who installed ropes.

(b) Noncorrosive metal data tags shall be used. The minimum height of the letters, stamped or etched, shall be one–sixteenth inch.

(c) A new tag shall be installed at each rope renewal. When ropes are refastened, the original tag shall be retained and a supplemental tag showing the date of refastening and the name of the person or firm who refastened the ropes shall be provided.

(22) Electrical wiring and equipment.

(a) All electrical equipment and wiring shall conform to the requirements of the National Electrical Code, NFPA 70–1971; ANSI C1–1971 (Rev. of 1968), except as modified by ANSI A120.1–1970 "American National Standard Safety Requirements for Powered Platforms for Exterior Building Maintenance."

Note: For detail design specifications for electrical equipment, see Part 2, ANSI A120.1–1970.

(b) All motors and operation and control equipment shall be supplied from a single power source.

(c) The power supply for the powered platform shall be an independent circuit supplied through a fused disconnect switch.

(d) Electrical conductor parts of the power supply system shall be protected against accidental contact.

(e) Electrical grounding shall be provided.

(i) Provision for electrical grounding shall be included with the power–supply system.

(ii) Controller cabinets, motor frames, hoisting machines, the working platform, roof car and roof car track system, and noncurrent carrying parts of electrical equipment, where provided, shall be grounded.

(iii) The controller, where used, shall be so designed and installed that a single ground or short circuit will not prevent both the normal and final stopping device from stopping the working platform.

(iv) Means shall be provided on the roof car and working platform for grounding portable electric tools.

(v) The working platform shall be grounded through a grounding connection in a traveling cable. Electrically powered tools utilized on the working platform shall be grounded.

(f) Electrical receptacles located on the roof or other exterior location shall be of a weatherproof type and shall be located so as not to be subject to contact with water or accumulated snow. The receptacles shall be grounded and the electric cable shall include a grounding conductor. The receptacle and plug shall be a type designed to avoid hazard to persons inserting or withdrawing the plug. Provision shall be made to prevent application of cable strain directly to the plug and receptacle.

(g) Electric runway conductor systems shall be of the type designed for use in exterior locations and shall be located so as not to be subject to contact with water or accumulated snow. The conductors, collectors, and disconnecting means shall conform to the same requirements as those for cranes and hoists in Article 610 of the National Electrical Code, NFPA 70–1971; ANSI C1–1971 (Rev. of 1968). A grounded conductor shall parallel the power conductors and be so connected that it cannot be opened by the disconnecting means. The system shall be designed to avoid hazard to persons in the area.

(h) Electrical protective devices and interlocks of the weatherproof type shall be provided.

(i) Where the installation includes a roof car, electric contact(s) shall be provided and so connected that the operating devices for the working platform shall be operative only when the roof car is located and mechanically retained at an established operating point.

(j) Where the powered platform includes a power–operated roof car, the operating device for the roof car shall be inoperative when the roof car is mechanically retained at an established operating point.

(k) An electric contact shall be provided and so connected that it will cause the down direction relay for vertical travel to open if the tension in the traveling cable exceeds safe limits.

(l) An automatic overload device shall be provided to cut off the electrical power to the circuit in all hoisting motors for travel in the up direction, should the load applied to the hoisting ropes at either end of the working platform exceed 125 percent of its normal tension with rated load, as shown on the manufacturer's data plate on the working platform.

(m) An automatic device shall be provided for each hoisting rope which will cut off the electrical power to the hoisting motor or motors in the down direction and apply the brakes if any hoisting rope becomes slack.

(n) Upper and lower directional limit devices shall be provided to prevent the travel of the working platform beyond the normal upper and lower limits of travel.

(o) Operation of a directional limit device shall prevent further motion in the appropriate direction, if the normal limit of travel has been reached.

(p) Directional limit devices, if driven from the hoisting machine by chains, tapes, or cables, shall incorporate a device to disconnect the electric power from the hoisting machine and apply both the primary and secondary brakes in the event of failure of the driving means.

(q) Final terminal stopping devices of the working platform:

(i) Final terminal stopping devices for the working platform shall be provided as a secondary means of preventing the working platform from over–traveling at the terminals.

(ii) The device shall be set to function as close to each terminal landing as practical, but in such a way that under normal operating conditions it will not function when the working platform is stopped by the normal terminal stopping device.

(iii) Operation of the final terminal stopping device shall open the potential relay for vertical travel, thereby disconnecting the electric power from the hoisting machine, and applying both the primary and secondary brakes.

(iv) The final terminal stopping device for the upper limit of travel shall be mounted so that it is operated directly by the motion of the working platform itself.

(r) Emergency stop switches shall be provided in or adjacent to each operating device.

(s) Emergency stop switches shall:

(i) Have red operating buttons or handles.

(ii) Be conspicuously and permanently marked "stop."

(iii) Be the manually opened and manually closed type.

(iv) Be positively opened with the opening not solely dependent on springs.

(t) The manual operation of an emergency stop switch associated with an operating device for the working platform shall open the potential relay for vertical travel, thereby disconnecting the electric power from the hoisting machine and applying both the primary and secondary brakes.

(u) The manual operation of the emergency stop switch associated with the operating device for a power–driven roof car shall cause the electrical power to the traverse machine to be interrupted, and the traverse machine brake to apply.

(23) Requirements for emergency communications.

(a) Communication equipment shall be provided for each powered platform for use in an emergency.

(b) Two–way communication shall be established between personnel on the roof and personnel on the stalled working platform before any emergency operation of the working platform is undertaken by personnel on the roof.

(c) The equipment shall permit two–way voice communication between the working platform and

(i) Designated personnel continuously available while the powered platform is in use; and

(ii) Designated personnel on roof-powered platforms, undertaking emergency operation of the working platform by means of the emergency operating device located near the hoisting machine.

(d) The emergency communication equipment shall be one of the following types:

(i) Telephone connected to the central telephone exchange system; or

(ii) Telephones on a limited system or an approved two-way radio system, provided designated personnel are available to receive a message during the time the powered platform is in use.

[Order 76-6, § 296-24-87005, filed 3/1/76; Order 73-5, § 296-24-87005, filed 5/9/73 and Order 73-4, § 296-24-87005, filed 5/7/73.]

WAC 296-24-87007 Type T powered platforms. (1) Roof car. The requirements of WAC 296-24-87005 (1) through (5) shall apply to Type T powered platforms.

(2) Working platform. The requirements of WAC 296-24-87005 (6) through (16) apply to Type T powered platforms.

(a) The working platform shall be suspended by at least two wire ropes.

(b) The maximum rated speed at which the working platform of self-powered platforms may be moved in a vertical direction shall not exceed 35 feet per minute.

(3) Hoisting equipment. The requirements of WAC 296-24-87005 (17) and (18) shall apply to Type T powered platforms.

(4) Brakes. Brakes requirements of WAC 296-24-87005(19) shall apply.

(5) Hoisting ropes and rope connections.

(a) WAC 296-24-87005 (20)(a) through (f) and (h) shall apply to Type T powered platforms.

(b) Adjustable shackle rods in WAC 296-24-87005 (20)(g) shall apply to Type T powered platforms if the working platform is suspended by more than two wire ropes.

(6) Electrical wiring and equipment.

(a) The requirements of WAC 296-24-87005 (22)(a) through (f) shall apply to Type T powered platforms. "Circuit protection limitation," "powered platform electrical service system," all operating services and control equipment shall comply with the specifications contained in Part 2, Section 26, of ANSI A 120.1-1970.

(b) For electrical protective devices the requirements of WAC 296-24-87005 (22)(a) through (h) shall apply to Type T powered platforms. Requirements for the "circuit potential limitation" shall be in accordance with the specifications contained in Part 2, Section 26, of ANSI A 120.1-1970.

(7) Emergency communications. All the requirements of WAC 296-24-87005(23) shall apply to Type T powered platforms.

(8) Safety belts and lifelines.

(a) Each employee on the working platform of type T powered platforms shall be provided with a safety belt with means for attachment to a lifeline on the roof or to the working platform. It is recommended that safety belts, lines and other components, including fastening means and anchorages to the working platform, building, or structure, be capable of withstanding a static load of 4,000 pounds without damage or permanent deformation of any part.

(b) Fastening devices should be of the self-closing type, equipped with a locking device to prevent accidental opening of the fastening device.

(c) Harness-type belts are recommended. If body-type belts are used, it is recommended that the portion of the belt bearing on the front of the wearer's body have a minimum width of 3 inches.

(d) It is recommended that the line used to connect the belt to the platform, or to a lifeline attached to the building, have a maximum length of 5 feet.

[Order 73-5, § 296-24-87007, filed 5/9/73 and Order 73-4, § 296-24-87007, filed 5/7/73.]

WAC 296-24-87009 Inspections and tests. (1) Inspections and tests of new installations and alterations. All powered platform installations shall, on their completion, and before being placed in service, be subjected to an acceptance test in the field to determine that all parts of the installation conform to applicable requirements of these safety and health standards, and that all safety and operating equipment functions as required. A similar inspection and test shall be made following a major alteration to an existing installation.

(2) Periodic inspections and tests. Each installation shall undergo a periodic inspection and test at least every 12 months. All parts of the equipment shall be inspected, and where necessary, tested to determine that they are in safe operating condition.

(3) Maintenance, inspections and tests. Each installation shall undergo a maintenance inspection and test every 30 days, except where the cleaning cycle is less than 30 days, such inspection and test shall be made prior to each cleaning cycle. The results of these inspections and tests shall be recorded in a log which is available for review by the director or his designated representative. Each log entry shall include the date of the inspection or test and shall be signed by the person making the inspection or test.

(4) Special inspection of governors and secondary brakes.

(a) Special inspections and tests of the governor and secondary braking system shall be made at intervals not exceeding 1 year.

(b) The inspection and test shall include a verification that the initiating device for the secondary breaking operates at the proper overspeed.

(c) If adequate tests cannot be performed in the field, the initiating device may be removed from the powered platform and sent to a shop equipped to make such a test.

(d) The inspection shall include a verification of the proper functioning of the secondary brake. If an adequate test cannot be performed in the field, the hoisting machine may be removed from the building and sent to a shop equipped to make such a test.

(e) If any hoisting machine or initiating device for the secondary brake system is removed from the building for testing, all reinstalled and directly related components shall be reinspected prior to returning the powered platform installation to service.

(5) Adverse weather. The operation of powered platforms during severe adverse weather conditions is prohibited.

(6) Maintenance.

(a) Required maintenance. All parts of equipment on which safe operation depends shall be maintained in proper working order so that they perform the function for which they are intended.

(b) Broken or worn parts, worn switch contacts, brushes, and short flexible conductors of electrical devices, which may interfere with safe operation, shall be replaced promptly. Electrical receptacles and plugs shall be replaced promptly when worn or damaged. All electrical connections shall be kept tight.

(c) Components of the electrical service system and traveling cables shall be replaced when damaged or substantially abraded.

(d) Gears, shafts, bearings, brakes, and hoisting drums shall be maintained in proper alignment. Gears shall be replaced promptly when there is evidence of appreciable wear.

(7) Cleaning.

(a) Controller contactors and relays shall be kept clean and free from dirt.

(b) All other parts shall be kept clean, if their proper functioning would be affected by the presence of dirt or other contaminants.

(8) Periodic reshackling of hoisting ropes. The hoisting ropes shall be reshackled at the nondrum ends at intervals not exceeding 24 months. In reshackling the ropes, a sufficient length shall be cut from the end of the rope to remove damaged or fatigued portions.

(9) Making safety devices inoperative. No person shall at any time make any required safety device or electrical protective device inoperative, except when necessary during tests, inspections, and maintenance. Immediately upon completion of such test, inspections, and maintenance, the devices shall be restored to their normal operating condition.

(10) Damaged rope. Wire ropes shall be replaced whenever there are six or more broken wires in any one lay of the wire rope, or whenever the ropes are damaged or in a deteriorated condition.

(11) Roof track system. Roof track systems tiedowns, or similar equipment, if provided, shall be maintained in proper working order so that they perform the function for which they are intended.

(12) Building face guiding members. T–rails, indented mullions, or equivalent guides located in the face of the building, if provided, shall be maintained in proper working order so that they perform the function for which they are intended. Brackets for cable stabilizers, if provided, shall similarly be maintained in proper working order.

[Order 73–5, § 296–24–87009, filed 5/9/73 and Order 73–4, § 296–24–87009, filed 5/7/73.]

WAC 296-24-885 Vehicle-mounted elevating and rotating work platforms.

[Order 76–6, § 296–24–885, filed 3/1/76; Order 73–5, § 296–24–885, filed 5/9/73 and Order 73–4, § 296–24–885, filed 5/7/73.]

WAC 296-24-88501 Definitions. (1) Aerial device. Any vehicle–mounted device, telescoping or articulating or both, which is used to position workmen and/or materials.

(2) Aerial ladder. An aerial device consisting of a single– or multiple–section extensible ladder.

(3) Articulating boom platform. An aerial device with two or more hinged boom sections.

(4) Extensible boom platform. An aerial device (except ladders) with a telescopic or extensible boom. Telescopic derricks with personnel platform attachments shall be considered to be extensible boom platforms when used with a personnel platform.

(5) Electric line truck. A truck used to transport men, tools and material, and to serve as a traveling workshop for electric power line construction and maintenance work. It is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes and elevating material and/or men.

(6) Mobile unit. A combination of an aerial device, its vehicle, and related equipment.

(7) Platform. Any personnel–carrying device (basket or bucket) which is a component of an aerial device.

(8) Vehicle. Any carrier that is not manually propelled.

(9) Vertical tower. An aerial device designed to elevate a platform in a substantially vertical axis.

[Order 76–6, § 296–24–88501, filed 3/1/76; Order 73–5, § 296–24–88501, filed 5/9/73 and Order 73–4, § 296–24–88501, filed 5/7/73.]

WAC 296-24-88503 General requirements. (1) Unless otherwise provided in this section, aerial devices (aerial lifts) acquired on or after July 1, 1975, shall be designed and constructed in conformance with the applicable requirements of the American National Standard for "Vehicle Mounted Elevating and Rotating Work Platforms," ANSI A92.2–1969, including appendix. Aerial lifts acquired for use before July 1, 1975 which do not meet the requirements of ANSI A92.2–1969, may not be used after July 1, 1976, unless they shall have been modified so as to conform with the applicable design and construction requirements of ANSI A92.2–1969. Aerial devices include the following types of vehicle–mounted aerial devices used to elevate personnel and/or material to jobsites above ground:

(a) Extensible boom platforms;

(b) Aerial ladders;

(c) Articulating boom platforms;

(d) Vertical towers, and

(e) A combination of any of the above.

(f) Aerial equipment may be made of metal, wood, fiberglass reinforced plastic (FRP), or other material; may be powered or manually operated; and are deemed to be aerial lifts whether or not they are capable of rotating about a substantially vertical axis.

(2) Aerial lifts may be "field modified" for uses other than those intended by the manufacturer, provided the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in conformity with all applicable provisions of ANSI A92.2–1969 and this section, and to be at least as safe as the equipment was before modification.

(3) The requirements of this section do not apply to firefighting equipment or electric line trucks used in the construction and maintenance of power distribution lines by telecommunications employees, line clearance tree trimming employees, electric contractor employees and electric utility employees, except with the requirement that a vehicle be a stable support for the aerial device.

(4) When operating aerial lifts proximate to, under, over, by or near electric power lines, the requirements of subsection (4) shall apply.

(a) The following clearances shall be maintained:

(i) For lines rated at 50kV or less, the minimum clearance between the lines and any part of the aerial lift shall be at least 10 feet;

(ii) When the lines are rated in excess of 50kV, the minimum clearance between the lines and any part of the aerial lift shall be at least 10 feet plus 0.4 inch for each kilovolt in excess of 50kV, or twice the length of the line insulator, but never less than 10 feet;

(iii) The requirements set forth in subdivision (4)(a) do not apply.

(A) Where the electric power transmission or distribution lines have been deenergized and visibly grounded at the point of work, or where insulating barriers, not a part of or an attachment to the aerial lift, have been erected to prevent physical contact with the lines.

(b) Proximity warning devices may be used, but not in lieu of meeting the requirements contained in this subsection.

(c) The owner of the lines or his authorized representative shall be notified and provided with all pertinent information before the commencement of operations near electric lines.

(d) Any overhead wire shall be considered to be an energized line until the owner of the line or his authorized representative states that it is deenergized.

[Order 76-6, § 296-24-88503, filed 3/1/76; Order 73-5, § 296-24-88503, filed 5/9/73 and Order 73-4, § 296-24-88503, filed 5/7/73.]

WAC 296-24-88505 Specific requirements. (1) Ladder trucks and tower trucks. Before the truck is moved for highway travel, aerial ladders shall be secured in the lower traveling position by the locking device above the truck cab, and the manually operated device at the base of the ladder, or by other equally effective means (e.g., cradles which prevent rotation of the ladder in combination with positive acting linear actuators).

(2) Extensible and articulating boom platforms.

(a) Lift controls shall be tested each day prior to use to determine that such controls are in safe working condition.

(b) Only trained persons shall operate an aerial lift.

(c) Belting off to an adjacent pole, structure, or equipment while working from an aerial lift shall not be permitted.

(d) Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.

(e) A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.

(f) Boom and basket load limits specified by the manufacturer shall not be exceeded.

(g) The brakes shall be set and outriggers, when used, shall be positioned on pads or a solid surface. Wheel chocks shall be installed before using an aerial lift on an incline.

(h) An aerial lift truck may not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation in accordance with the provisions of WAC 296-24-88503 (1)(2).

(i) Articulating boom and extensible boom platforms, primarily designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. Controls shall be plainly marked as to their function. Lower level controls shall not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

(j) Climbers shall not be worn while performing work from an aerial lift.

(k) Before moving an aerial lift for travel, the boom(s) shall be inspected to see that it is properly cradled and outriggers are in stowed position, except as provided in subdivision (h).

(3) Bursting safety factor. All critical hydraulic and pneumatic components shall comply with the provisions of the American National Standards Institute Standard, ANSI A92.2–1969, Section 4.9 Bursting Safety Factor. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of at least two to one.

(4) Welding standards. All welding shall conform to the following Automotive Welding Society (AWS) Standards, as applicable:

(a) Standard Qualification Procedure, AWS B3.0–41.

(b) Recommended Practices for Automotive Welding Design, AWS D8.4–61.

(c) Standard Qualification of Welding Procedures and Welders for Piping and Tubing, AWS D10.9–69.

(d) Specifications for Welding Highway and Railway Bridges, AWS D2.0–69. (Rev. 2–5–76.)

[Order 76-6, § 296-24-88505, filed 3/1/76.]

WAC 296-24-900 Manlifts.

[Order 73-5, § 296-24-900, filed 5/9/73 and Order 73-4, § 296-24-900, filed 5/7/73.]

WAC 296-24-90001 Definitions. (1) Handhold (handgrip). A handhold is a device attached to the belt

which can be grasped by the passenger to provide a means of maintaining balance.

(2) Open type. One which has a handgrip surface fully exposed and capable of being encircled by the passenger's fingers.

(3) Closed type. A cup–shaped device, open at the top in the direction of travel of the step for which it is to be used, and closed at the bottom into which the passenger may place his fingers.

(4) Limit switch. A device, the purpose of which is to cut off the power to the motor and apply the brakes to stop the carrier in the event that a loaded step passes the terminal landing.

(5) Manlift. A device consisting of a power–driven endless belt moving in one direction only, and provided with steps or platforms and handholds attached to it for the transportation of personnel from floor to floor.

(6) Rated speed. Rated speed is the speed for which the device is designed and installed.

(7) Split–rail switch. An electric limit switch operated mechanically by the rollers on the manlift steps. It consists of an additional hinged or "split" rail, mounted on the regular guiderail, over which the step rollers pass. It is spring–loaded in the "split" position. If the step supports no load, the rollers will "bump" over the switch; if a loaded step should pass over the section, the split rail will be forced straight, tripping the switch and opening the electrical circuit.

(8) Step (platform). A step is a passenger carrying unit.

(9) Travel. The travel is the distance between the centers of the top and bottom pulleys.

[Order 73–5, § 296–24–90001, filed 5/9/73 and Order 73–4, § 296–24–90001, filed 5/7/73.]

WAC 296-24-90003 General requirements. (1) Application. These standards apply to the construction, maintenance, inspection, and operation of manlifts in relation to accident causing hazards. Manlifts covered by these standards consist of platforms or brackets and accompanying handholds mounted on, or attached to an endless belt, operating vertically in one direction only and being supported by, and driven through pulleys, at the top and bottom. These manlifts are intended for conveyance of persons only. It is not intended that these standards cover moving stairways, elevators with enclosed platforms ("Paternoster" elevators), gravity lifts, nor conveyors used only for conveying material. These standards apply to manlifts used to carry only personnel trained and authorized by the employer in their use.

(2) Exceptions for new and existing equipment. The purpose of these standards is to provide reasonable safety for life and limb.

(3) Design requirements. All new manlift installations and equipment installed after the effective date of these standards shall meet the design requirements of the "American National Safety Standard for Manlifts ANSI A90.1–1969," and the requirements of this section.

(4) Reference to other codes. The following codes are applicable to this section. Safety Code for Mechanical Power Transmission Apparatus ANSI B15.1–1953 (R 1958) and WAC 296–24–150 through 296–24–20533; National Electrical Code, NFPA 70–1971; ANSI C1–1971 (Rev. of 1968) and WAC 296–45–590; Safety Code for Fixed Ladders, ANSI A14.3–1956 and Safety Requirements for Floor and Wall Openings, Railings and Toeboards, ANSI A12.1–1967 and WAC 296–24–735 through 296–24–85505.

(5) Floor openings.

(a) Allowable size. Floor openings for both the "up" and "down" runs shall be not less than 28 inches nor more than 36 inches in width for a 12–inch belt not less than 34 inches nor more than 38 inches for a 14–inch belt; and not less than 36 inches nor more than 40 inches for a 16–inch belt and shall extend not less than 24 inches, nor more than 28 inches from the face of the belt.

(b) Uniformity. All floor openings for a given manlift shall be uniform in size and shall be approximately circular, and each shall be located vertically above the opening below it.

(6) Landing.

(a) Vertical clearance. The clearance between the floor or mounting platform and the lower edge for the conical guard above it required by WAC 296–24–90003(7) shall not be less than 7 feet 6 inches. Where this clearance cannot be obtained no access to the manlift shall be provided and the manlift runway shall be enclosed where it passes through such floor.

(b) Clear landing space. The landing space adjacent to the floor openings shall be free from obstruction and kept clear at all times. This landing space shall be at least 2 feet in width from the edge of the floor opening used for mounting and dismounting.

(c) Lighting and landing. Adequate lighting not less than 5–foot candles, shall be provided at each floor landing at all times when the lift is in operation.

(d) Landing surface. The landing surfaces at the entrances and exits to the manlift shall be constructed and maintained as to provide safe footing at all times.

(e) Emergency landings. Where there is a travel of 50 feet or more between floor landings, one or more emergency landings shall be provided so that there will be a landing (either floor or emergency) for every 25 feet or less of manlift travel.

(i) Emergency landings shall be accessible from both the "up" and "down" rungs of the manlift and shall give access to the ladder required in WAC 296–24–90003(12).

(ii) Emergency landings shall be completely enclosed with a standard railing and toeboard.

(iii) Platforms constructed to give access to bucket elevators or other equipment for the purpose of inspection, lubrication, and repair may also serve as emergency landings under this rule. All such platforms will then be considered part of the emergency landing and shall be provided with standard railings and toeboards.

(7) Guards on underside of floor openings.

(a) Fixed type. On the ascending side of the manlift floor openings shall be provided with a bevel guard or cone meeting the following requirements:

(i) The cone shall make an angle of not less than 45° with the horizontal. An angle of 60° or greater shall be used where ceiling heights permit.

(ii) The lower edge of this guard shall extend at least 42 inches outward from any handhold on the belt. It shall not extend beyond the upper surface of the floor above.

(iii) The cone shall be made of not less than No. 18 U.S. gauge sheet steel or material of equivalent strength or stiffness. The lower edge shall be rolled to a minimum diameter of one–half inch and the interior shall be smooth with no rivets, bolts or screws protruding.

(b) Floating type. In lieu of the fixed guards specified in WAC 296–24–90003 (7)(a) a floating type safety cone may be used, such floating cones to be mounted on hinges at least 6 inches below the under side of the floor and so constructed as to actuate a limit switch should a force of 2 pounds be applied on the edge of the cone closest to the hinge. The depth of this floating cone need not exceed 12 inches.

(8) Protection of entrances and exits.

(a) Guardrail requirement. The entrances and exits at all floor landings affording access to the manlift shall be guarded by a maze (staggered railing) or a handrail equipped with self–closing gates.

(b) Construction. The rails shall be standard guardrails with toeboards meeting the provisions of the Safety Requirements for Floor and Wall Openings, Railings and Toeboards, ANSI A12.1–1967 and WAC 296–24–750 through 296–24–75011.

(c) Gates. Gates, if used, shall open outward and shall be self–closing. Corners of gates shall be rounded.

(d) Maze. Maze or staggered openings shall offer no direct passage between enclosure and outer floor space.

(e) Except where building layout prevents, entrances at all landings shall be in the same relative position.

(f) If located in buildings to which the public has access, such manlift or manlifts shall be located in an enclosure protected by self–closing spring–locked doors. Keys to such doors shall be limited to authorized personnel.

(9) Guards for openings.

(a) Construction. The floor opening at each landing shall be guarded on sides not used for entrance or exit by a standard railing and toeboard or by panels or wire mesh of not less than Number 10 U.S. gage, expanded metal of not less than Number 13 U.S. gage or sheet metal of equivalent strength.

(b) Guardrails in stairwells. When belt manlift is installed in a stairwell a standard guardrail shall be placed between the floor openings of the manlift and the stairways.

(c) Height and location. Such rails or guards shall be at least forty–two inches in height on the "up" running side and sixty–six inches on the "down" running side. If a guardrail is used the section of the guard above the rail may be of the construction specified in WAC 296–24–90003 (9)(a) or may consist of vertical or horizontal bars which will reject a ball six inches in diameter. Rails or guards shall be located not more than one foot from the edge of the floor opening.

(d) Safeguards required. Expanded metal, sheet metal or wood guards must be installed to cover the area from the floor to seven feet above the floor on each exposed side of the belt manlift at each floor landing, so persons cannot place their hands in the area where the step rollers travel.

(10) Bottom arrangement.

(a) Bottom landing. At the bottom landing the clear area shall be not smaller than the area enclosed by the guardrails on the floors above, and any wall in front of the down–running side of the belt shall be not less than 48 inches from the face of the belt. This space shall not be encroached upon by stairs or ladders.

(b) Location of lower pulley. The lower (boot) pulley shall be installed so that it is supported by the lowest landing served. The sides of the pulley support shall be guarded to prevent contact with the pulley or the steps.

(c) Mounting platform. A mounting platform shall be provided in front or to one side of the uprun at the lowest landing, unless the floor level is such that the following requirement can be met: The floor or platform shall be at or above the point at which the upper surface of the ascending step completes its turn and assumes a horizontal position.

(d) Guardrails. To guard against persons walking under a descending step, the area on the downside of the manlift shall be guarded in accordance with WAC 296–24–90003(8). To guard against a person getting between the mounting platform and an ascending step, the area between the belt and the platform shall be protected by a guardrail.

(11) Top arrangements.

(a) Clearance from floor. A top clearance shall be provided of at least 11 feet above the top terminal landing. This clearance shall be maintained from a plane through each face of the belt to a vertical cylindrical plane having a diameter 2 feet greater than the diameter of the floor opening, extending upward from the top floor to the ceiling on the up–running side of the belt. No encroachment of structural or machine supporting members within this space will be permitted.

(b) Pulley clearance.

(i) There shall be a clearance of at least 5 feet between the center of the head pulley shaft and any ceiling obstruction.

(ii) The center of the head pulley shaft shall be not less than 6 feet above the top terminal landing.

(c) Emergency grab rail. An emergency grab bar or rail and platform shall be provided at the head pulley when the distance to the head pulley is over 6 feet above the top landing, otherwise only a grab bar or rail is to be provided to permit the rider to swing free should the emergency stops become inoperative.

(12) Emergency exit ladder. A fixed metal ladder accessible from both the "up" and "down" run of the manlift shall be provided for the entire travel of the manlift. Such ladder shall be in accordance with ANSI A14.3–1956, Safety Code for Fixed Ladders and WAC 296–24–810 through 296–24–81013.

(13) Superstructure bracing. Manlift rails shall be secured in such a manner as to avoid spreading, vibration, and misalignment.

(14) Illumination.

(a) General. Both runs of the manlift shall be illuminated at all times when the lift is in operation. An intensity of not less than 1–foot candle shall be maintained at all points. (However, see WAC 296–24–90003 (6)(c) for illumination requirements at landings.)

(b) Control of illumination. Lighting of manlift runways shall be by means of circuits permanently tied into the building circuits (no switches), or shall be controlled by switches at each landing. Where separate switches are provided at each landing, any switch shall turn on all lights necessary to illuminate the entire runway.

(15) Weather protection. The entire manlift and its driving mechanism shall be protected from the weather at all times.

[Order 76–6, § 296–24–90003, filed 3/1/76; Order 73–5, § 296–24–90003, filed 5/9/73 and Order 73–4, § 296–24–90003, filed 5/7/73.]

WAC 296–24–90005 Mechanical requirements. (1) Machines, general.

(a) Brakes. Brakes provided for stopping and holding a manlift shall be inherently self–engaging, by requiring power or force from an external source to cause disengagement. The brake shall be electrically released, and shall be applied to the motor shaft for direct–connected units or to the input shaft for belt–driven units. The brake shall be capable of stopping and holding the manlift when the descending side is loaded with 250 lb on each step.

(b) Belt.

(i) The belts shall be of hard–woven canvas, rubber–coated canvas, leather, or other material meeting the strength requirements of WAC 296–24–90003(3) and having a co–efficient of friction such that when used in conjunction with an adequate tension device it will meet the brake test specified in WAC 296–24–90005 (1)(a).

(ii) The width of the belt shall be not less than 12 inches for a travel not exceeding 100 feet, not less than 14 inches for a travel greater than 100 feet but not exceeding 150 feet and 16 inches for a travel exceeding 150 feet.

(iii) A belt that has become torn while in use on a manlift shall not be spliced and put back in service.

(iv) Belt fastenings. Belts shall be fastened by a lapped splice or shall be butt spliced with a strap on the side of the belt away from the pulley. For lapped splices, the overlap of the belt at the splice shall be not less than three feet where the total travel of the manlift does not exceed one hundred feet and not less than four feet, if the travel exceeds one hundred feet.

Where butt splices are used the straps shall extend not less than three feet on one side of the butt for a travel not in excess of one hundred feet, and four feet for a travel in excess of one hundred feet.

For twelve inch belts, the joint shall be fastened with not less than twenty special elevator bolts, each of a minimum diameter of one–quarter inch. These bolts shall be arranged symetrically in five rows so arranged as to cover the area of the joint effectively. The minimum number of bolts for a belt width of fourteen inches shall be not less than twenty–three and for belt widths of sixteen inches, the number of bolts shall be not less than twenty–seven.

(v) Pulleys. Drive pulleys and idler (boot) pulleys shall have a diameter not less than given in Table 1.

TABLE 1

Belt Construction	Minimum Strength (lb. per inch of width)	Minimum Pulley (diameter inches)
5 ply	1500	20
6 ply	1800	20
7 ply	2100	22

Note: Table No. 1 is included solely for the purpose of determining the minimum diameter of pulley required for the listed number of plys of belt construction.

[(vi) Pulley protection. The machine shall be so designed] and constructed as to catch and hold the driving pulley in event of shaft failure.

(2) Speed.

(a) Maximum speed. No manlift designed for a speed in excess of 80 feet per minute shall be installed.

(3) Platforms or steps.

(a) Minimum depth. Steps or platforms shall be not less than 12 inches nor more than 14 inches deep, measured from the belt to the edge of the step or platform.

(b) Width. The width of the step or platform shall be not less than the width of the belt to which it is attached.

(c) Distance between steps. The distance between steps shall be equally spaced and not less than 16 feet measured from the upper surface of one step to the upper surface of the next step above it.

(d) Angle of step. The surface of the step shall make approximately a right angle with the "up" and "down" run of the belt, and shall travel in the approximate horizontal position with the "up" and "down" run of the belt.

(e) Surfaces. The upper or working surfaces of the step shall be of a material having inherent nonslip characteristics (coefficient of friction not less than 0.5) or shall be covered completely by a nonslip tread securely fastened to it.

(f) Strength of step supports. When subjected to a load of 400 pounds applied at the approximate center of the step, step frames, or supports and their guides shall be of adequate strength to:

(i) Prevent the disengagement of any step roller.

(ii) Prevent any appreciable misalignment.

(iii) Prevent any visible deformation of the steps or its support.

(g) Prohibition of steps without handholds. No steps shall be provided unless there is a corresponding handhold above or below it meeting the requirements of WAC 296–24–90005(4). If a step is removed for repairs or permanently, the handholds immediately above and

below it shall be removed before the lift is again placed in service.

(4) Handholds.

(a) Location. Handholds attached to the belt shall be provided and installed so that they are not less than 4 feet nor more than 4 feet 8 inches above the step tread. These shall be so located as to be available on the both "up" and "down" run of the belt.

(b) Size. The grab surface of the handhold shall be not less than 4 1/2 inches in width, not less than 3 inches in depth, and shall provide 2 inches of clearance from the belt. Fastenings for handholds shall be located not less than 1 inch from the edge of the belt.

(c) Strength. The handhold shall be capable of withstanding, without damage, a load of 300 pounds applied parallel to the run of the belt.

(d) Prohibition of handhold without steps. No handhold shall be provided without a corresponding step. If a handhold is removed permanently or temporarily, the corresponding step and handhold for the opposite direction of travel shall also be removed before the lift is again placed in service.

(e) Type. All handholds shall be of the closed type.

(5) Up limit stops.

(a) Requirements. Two separate automatic stop devices shall be provided to cut off the power and apply the brake when a loaded step passes the upper terminal landing. One of these shall consist of a split–rail switch mechanically operated by the step roller and located not more than 6 inches above the top terminal landing. The second automatic stop device may consist of any of the following:

(i) Any split–rail switch placed 6 inches above and on the side opposite the first limit switch.

(ii) An electronic device.

(iii) A switch actuated by a lever, rod, or plate, the latter to be placed on the "up" side of the head pulley so as to just clear a passing step.

(b) Emergency stop switch, treadle type in pit on down side. An emergency stop treadle switch shall be placed in the area below the lowest landing on the "down" side. This switch must stop the mechanism if a person should fail to get off at the lowest landing and be ejected from the step as it approaches its position to travel around the boot pulley.

(c) Manual reset location. After the manlift has been stopped by a stop device it shall be necessary to reset the automatic stop manually. The device shall be so located that a person resetting it shall have a clear view of both the "up" and "down" runs of the manlift. It shall not be possible to reset the device from any step or platform.

(d) Cut–off point. The initial limit stop device shall function so that the manlift will be stopped before the loaded step has reached a point of 24 inches above the top terminal landing.

(e) Electrical requirements.

(i) Where such switches open the main motor circuit directly they shall be of the multipole type.

(ii) Where electronic devices are used they shall be so designed and installed that failure will result in shutting off the power to the driving motor.

(iii) Where flammable vapors or dusts may be present all electrical installations shall be in accordance with the National Electric Code, NFPA 70–1971; ANSI C 1–1971 (Rev. of 1968), requirements for such locations.

(iv) Unless of the oil–immersed type controller contacts carrying the main motor current shall be copper to carbon or equal, except where the circuit is broken at two or more points simultaneously.

(6) Emergency stop.

(a) General. An emergency stop means shall be provided.

(b) Location. This stop means shall be within easy reach of the ascending and descending runs of the belt.

(c) Operation. This stop means shall be so connected with the control lever or operating mechanism that it will cut off the power and apply the brake when pulled in the direction of travel.

(d) Rope. If rope is used, it shall be not less than three–eighths inch in diameter. Wire rope, unless marlin–covered, shall not be used.

(7) Instruction and warning signs.

(a) Instruction signs at landings or belts. Signs of conspicuous and easily read style giving instructions for the use of the manlift shall be posted at each landing or stenciled on the belt.

(i) Such signs shall be of letters not less than 1 inch in height and of a color having high contrast with the surface on which it is stenciled or painted (white or yellow on black or black on white or gray).

(ii) The instructions shall read approximately as follows:

Face the belt.
Use the handholds.
To stop–pull rope.

(b) Top floor warning sign and light. (i) At the top floor an illuminated sign shall be displayed bearing the following wording:

"TOP FLOOR–GET OFF"

Signs shall be in block letters not less than 2 inches in height. This sign shall be located within easy view of an ascending passenger and not more than 2 feet above the top terminal landing.

(ii) In addition to the sign required by WAC 296–24–90005(7), a red warning light of not less than 40–watt rating shall be provided immediately below the upper landing terminal and so located as to shine in the passenger's face.

(c) Bottom of manlift warning signs, light and buzzer.

(i) Sign or light. A sign or light warning the passenger he is approaching the bottom landing shall be posted above bottom landing in a conspicuous place. Sign or light to be similar in size to top warning light and sign noted above.

(ii) An electric buzzer. An electric buzzer shall be installed five feet above the bottom landing on the down side to warn the rider that he is approaching the bottom landing and the buzzer shall be activated automatically by the weight of a load on a step.

(d) Visitor warning. A conspicuous sign have the following legend–AUTHORIZED PERSONNEL ONLY–shall be displayed at each landing. The sign shall be of block letters not less than 2 inches in height and shall be of a color offering high contrast with the background color.

[Order 74-27, § 296-24-90005, filed 5/7/74; Order 73-5, § 296-24-90005, filed 5/9/73 and Order 73-4, § 296-24-90005, filed 5/7/73.]

WAC 296-24-90007 Operating rules. (1) Proper use of manlifts. No freight, packaged goods, pipe, lumber, or construction materials of any kind shall be handled on any manlift.

[Order 73-5, § 296-24-90007, filed 5/9/73 and Order 73-4, § 296-24-90007, filed 5/7/73.]

WAC 296-24-90009 Periodic inspection. (1) Frequency. All manlifts shall be inspected by a competent designated person at intervals of not more than 30 days. Limit switches shall be checked weekly. Manlifts found to be unsafe shall not be operated until properly repaired.

(2) Items covered. This periodic inspection shall cover but is not limited to the following items:

Steps.
Step fastenings.
Rails.
Rail supports and fastenings.
Rollers and slides.
Belt and belt tension.
Handholds and fastenings.
Floor landings.
Guardrails.
Lubrication.
Limit switches.
Warning signs and lights.
Illumination.
Drive pulley.
Bottom (boot) pulley and clearance.
Pulley supports.
Motor.
Driving mechanism.
Brake.
Electrical switches.
Vibration and misalignment.
"Skip" on up or down run when mounting step (indicating worn gears).

(3) Inspection log. A written record shall be kept of findings at each inspection. Records of inspection shall be made available to the director of labor and industries or his duly authorized representative.

[Order 73-5, § 296-24-90009, filed 5/9/73 and Order 73-4, § 296-24-90009, filed 5/7/73.]

Part K
COMPRESSED GAS AND COMPRESSED GAS EQUIPMENT

WAC

296-24-920 Inspection of compressed gas cylinders.
296-24-92001 Definitions.
296-24-92003 General requirements.
296-24-92005 Inspection of low-pressure cylinders exempt from the hydrostatic test including acetylene cylinders.
296-24-92007 Low-pressure cylinders subject to hydrostatic testing.
296-24-92009 High-pressure cylinders.
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296-24-930 Safety relief devices for compressed gas cylinders.
296-24-93001 Definitions.
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296-24-935 Safety relief devices for cargo and portable tanks storing compressed gases.
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296-24-940 Air receivers.
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WAC 296-24-920 Inspection of compressed gas cylinders.

[Order 73-5, § 296-24-920, filed 5/9/73 and Order 73-4, § 296-24-920, filed 5/7/73.]

WAC 296-24-92001 Definitions. (1) High- and low-pressure cylinders. High-pressure cylinders means those cylinders with a marked service pressure of 900 p.s.i. or greater; low-pressure cylinders are those with a marked service pressure less than 900 p.s.i.

(2) Minimum allowable wall thickness. The minimum allowable wall thickness means the minimum wall thickness required by the specification under which the cylinder was manufactured.

(3) Dents. Dents (in cylinders) means deformations caused by the cylinder coming in contact with a blunt object in such a way that the thickness of metal is not materially impaired.

(4) Cuts, gouges, or digs. Cuts, gouges, or digs (in cylinders) means deformations caused by contact with a sharp object in such a way as to cut into or upset the metal of the cylinder, decreasing the wall thickness at that point.

(5) Corrosion or pitting. Means corrosion or pitting in cylinders involving the loss of wall thickness by corrosive media.

Note: There are several kinds of pitting or corrosion to be considered.

(6) Isolated pitting. Means isolated pits of small cross-section which do not effectively weaken the cylinder wall but are indicative of possible complete penetration and leakage.

Note: Since the pitting is isolated the original wall is essentially intact.

(7) Line corrosion. Means pits which are not isolated but are connected or nearly connected to others in a narrow band or line.

Note: This condition is more serious than isolated pitting. Line corrosion frequently occurs in the area of intersection of the footring and bottom of a cylinder. This is sometimes referred to as "crevice corrosion."

(8) General corrosion. Means corrosion which covers considerable surface areas of the cylinder.

Note: It reduces the structural strength. It is often difficult to measure or estimate the depth of general corrosion because direct comparison with the original wall cannot always be made. General corrosion is often accompanied by pitting.

(9) "DOT" means the U.S. Department of Transportation.

[Order 73-5, § 296-24-92001, filed 5/9/73 and Order 73-4, § 296-24-92001, filed 5/7/73.]

WAC 296-24-92003 General requirements. (1) Application.

(a) Each employer shall determine that compressed gas cylinders under his control are in a safe condition to the extent that this can be determined by visual, and other inspection required by WAC 296-24-920 through 296-24-92011.

(b) The requirements contained in these standards are not intended to apply to cylinders manufactured under specification DOT (ICC)-3HT (49 CFR Ch.1). Separate requirements covering service life and standards for visual inspection of these cylinders are contained in Compressed Gas Association Pamphlet C-8, "Standard for Requalification of ICC-3HT Cylinders."

(2) Quality of inspection. Experience in the inspection of cylinders is an important factor in determining the acceptability of a given cylinder for continued service.

Note: Users lacking this experience and having doubtful cylinders should return them to a manufacturer of the same type of cylinders for reinspection.

[Order 73-5, § 296-24-92003, filed 5/9/73 and Order 73-4, § 296-24-92003, filed 5/7/73.]

WAC 296-24-92005 Inspection of low-pressure cylinders exempt from the hydrostatic test including acetylene cylinders. (1) Application. This section covers cylinders of the type that are exempt from the hydrostatic retest requirements of the DOT by virtue of their exclusive use in certain noncorrosive gas service. They are not subject to internal corrosion and do not require internal shell inspection.

(2) Preparation for inspection. Rust, scale, caked paint, etc., shall be removed from the exterior surface so that the surface can be adequately observed. Facilities shall be provided for inverting the cylinder to facilitate inspection of the bottom. This is important because experience has shown this area to be the most susceptible to corrosion.

(3) Exterior inspection. Cylinders shall be checked as outlined below for corrosion, general distortion, or any other defect that might indicate a weakness which would render it unfit for service.

(a) To fix corrosion limits for all types, designs, and sizes of cylinders, and include them in this section is not practicable. Cylinders shall meet the requirements of WAC 296-24-92005(3). Failure to meet any of these requirements is of itself cause for rejection of a cylinder.

(i) A cylinder shall be rejected when the tare weight is less than 95 percent of the original tare weight marked on the cylinder. When determining tare weight, be sure that the cylinder is empty.

(ii) A cylinder shall be rejected when the remaining wall in an area having isolated pitting only is less than one-third of the minimum allowable wall thickness as determined under WAC 296-24-92005 (3)(b) (3)(d).

(iii) A cylinder shall be rejected when line corrosion on the cylinder is 3 inches in length or over and the remaining wall is less than three-fourths of the minimum allowable wall thickness or when line corrosion is less than 3 inches in length and the remaining wall thickness is less than one-half the minimum allowable wall thickness as determined under WAC 296-24-92005 (3)(b) through (3)(d).

(iv) A cylinder shall be rejected when the remaining wall in an area of general corrosion is less than one-half of the minimum allowable wall thickness as determined under WAC 296-24-92005 (3)(b) through (3)(d).

(b) To use the criteria in WAC 296-24-92005 (3)(a), it is necessary to know the original wall thickness of the cylinder or the minimum allowable wall thickness. Table M-1 lists the minimum allowable wall thickness under DOT specifications (49 CFR Ch.1) for a number of common size low-pressure cylinders.

TABLE M-1

Cylinder size O.D. x length (inches)	DOT Specification marking	Nominal water capacity (pounds)	Minimum allowable wall thickness (inches)
15 x 46	4B240[1]	239	0.128
14 13/16 x 47	4E240	239	.140
14 15/16 x 46	4BA240	239	.086
14 11/16 x 28 3/8	4BA240	143	.086
11 29/32 x 32 11/16	4BA240	95	.078
11 29/32 x 18 11/32	4BA240	48	.078

[1] Without longitudinal seam.

(c) When the wall thickness of the cylinder at manufacture is not known, and the actual wall thickness cannot be measured, this cylinder shall be rejected when the inspection reveals that the deepest pit in a general corrosion area exceeds three sixty-fourths inch. This is arrived at by considering that in no case shall the pitting exceed one-half the minimum allowable wall thickness which is 0.064 inch. When a pit measures 0.043 inch (approximately three sixty-fourths inch) in a corrosion area, general corrosion will already have removed 0.021 inch of the original wall and the total pit depth as compared to the initial wall will be 0.064 inch.

(d) When the original wall thickness at manufacture is known, or the actual wall thickness is measured, this thickness less one and one-half times the maximum measured pit depth shall be 0.064 inch or greater. If it is less, the cylinder shall be rejected.

(e) Dents are of concern where the metal deformation is sharp and confined, or where they are near a weld. Where metal deformation is not sharp, dents of larger magnitude can be tolerated.

(f) Where denting occurs so that any part of the deformation includes a weld, the maximum allowable dent depth shall be one-fourth inch.

(g) When denting occurs so that no part of the deformation includes a weld, the cylinder shall be rejected if

the depth of the dent is greater than one-tenth of the mean diameter of the dent.

(h) Cuts, gouges, or digs reduce the wall thickness of the cylinder and in addition are considered to be stress raisers. Depth limits are set in these standards; however, cylinders shall be rejected at one-half of the limit set whenever the length of the defect is 3 inches or more.

(i) When the original wall thickness at manufacture is not known, and the actual wall thickness cannot be measured a cylinder shall be rejected if the cut, gouge, or dig exceeds one-half of the minimum allowable wall thickness as determined under WAC 296-24-92005 (3)(b) through (3)(d).

(ii) When the original wall thickness at manufacture is known, or the actual wall thickness is measured, a cylinder shall be rejected if the original wall thickness minus the depth of the defect is less than one-half of the minimum allowable wall thickness as determined under WAC 296-24-92005 (3)(b) through (3)(d).

(i) Leaks can originate from a number of sources, such as defects in a welded or brazed seam, defects at the threaded opening, or from sharp dents, digs, gouges, or pits.

(i) To check for leaks, the cylinder shall be charged and carefully examined. All seams and pressure openings shall be coated with a soap or other suitable solution to detect the escape of gas. Any leakage is cause for rejection.

(ii) Safety relief devices as defined in WAC 296-24-93001(1) shall be tested for leaks before a charged cylinder is shipped from the cylinder filling plant.

(j) After fire damage, cylinders shall be carefully inspected for evidence of exposure to fire.

(i) Common evidences of exposure to fire are:

(A) Charring or burning of the paint or other protective coat.

(B) Burning or sintering of the metal.

(C) Distortion of the cylinder.

(D) Melted out fuse plugs.

(E) Burning or melting of valve.

(ii) The evaluation of fire damage by DOT regulations state that, "a cylinder which has been subjected to the action of fire must not again be placed in service until it has been properly reconditioned," in accordance with 49 CFR 173.34(f). The general intent of this requirement is to remove from service cylinders which have been subject to the action of fire which has changed the metallurgical structure or the strength properties of the steel, or in the case of acetylene cylinders caused breakdown of porous filler. This is normally determined by visual examination as covered above with particular emphasis to the condition of the protective coating. If the protective coating has been burnt off or if the cylinder body is burnt, warped, or distorted, it is assumed that the cylinder has been overheated and 49 CFR 173.34(f) shall be complied with. If, however, the protective coating is only dirtied from smoke or other debris, and is found by examination to be intact underneath, the cylinder shall not be considered affected within the scope of this requirement.

(k) Cylinders are manufactured with a reasonably symmetrical shape. Cylinders which have definite visible bulges shall be removed from service and evaluated. Cylinders shall be rejected when a variation of 1 percent or more is found in the measured circumferences or in peripheral distances measured from the valve spud to the center seam (of equivalent fixed point).

(l) Cylinder necks shall be examined for serious cracks, folds, and flaws. Neck cracks are normally detected by testing the neck during charging operations with a soap solution.

(m) Cylinder neck threads shall be examined whenever the valve is removed from the cylinder. Cylinders shall be rejected if the required number of effective threads are materially reduced, or if a gas tight seal cannot be obtained by reasonable valving methods. Gages shall be used to measure the number of effective threads.

(n) If the valve is noticeably tilted the cylinder shall be rejected.

(o) The footring and headring of cylinders may become so distorted through service abuse that they no longer perform their functions:

(i) To cause the cylinder to remain stable and upright.

(ii) To protect the valve. Rings shall be examined for distortion; for looseness, and for failure of welds. Appearances may often warrant rejection of the cylinder.

[Order 73-5, § 296-24-92005, filed 5/9/73 and Order 73-4, § 296-24-92005, filed 5/7/73.]

WAC 296-24-92007 Low-pressure cylinders subject to hydrostatic testing. (1) Application. Cylinders covered in this section are low-pressure cylinders other than those covered in WAC 296-24-92005 through 296-24-92005 (3)(o)(ii). They differ essentially from such cylinders in that they require a periodic hydrostatic retest which includes an internal and external examination. Defect limits for the external examination are prescribed in WAC 296-24-92005 through 296-24-92005 (3)(o)(ii), with exceptions for aluminum cylinders shown in WAC 296-24-92007(4).

(2) Preparation for inspection. Flammable gas cylinders shall be purged before being examined with a light. Lamps used for flammable gas cylinder inspection shall be explosion proof.

(3) Internal inspection. Cylinders shall be inspected internally at least every time the cylinder is periodically retested. The examination shall be made with a light of sufficient intensity to clearly illuminate the interior walls.

(4) External inspection of aluminum cylinders. The inspection requirements of WAC 296-24-92005 through 296-24-92005 (3)(o)(ii) shall be met, except as follows:

(a) Aluminum cylinders shall be rejected when impairment to the surface (corrosion or mechanical defect) exceeds a depth where the remaining wall is less than three-fourths of the minimum allowable wall thickness required by the specification under which the cylinder was manufactured.

(b) Aluminum cylinders subjected to the action of fire shall be removed from service.

[Order 73-5, § 296-24-92007, filed 5/9/73 and Order 73-4, § 296-24-92007, filed 5/7/73.]

WAC 296-24-92009 High-pressure cylinders. (1) Application. High-pressure cylinders are those with a marked service pressure of 900 p.s.i. or higher. They are seamless; no welding is permitted. The great bulk of such cylinders are of the 3A or 3AA types under DOT specifications (49 CFR Ch. 1).

(2) Preparation for inspection.

(a) Cylinders shall be cleaned for inspection so that the inside and outside surfaces and all conditions can be observed. This shall include removal of scale and caked paint from the exterior and the thorough removal of internal scale. Cylinders with interior coating shall be examined for defects in the coating. If the coating is defective, it shall be removed.

(b) A good inspection light of sufficient intensity to clearly illuminate the interior wall is mandatory for internal inspection. Flammable gas cylinders shall be purged before being examined with a light. Lamps for flammable gas cylinder inspection shall be explosion proof.

(3) Exterior inspection.

(a) To fix corrosion limits for all types, designs, and sizes of cylinders, and include them in this section, is not practicable. Considerable judgment is required in evaluating cylinders fit for service. Experience is a major factor, aside from strength considerations for high pressure cylinders.

(b) When the original wall thickness of the cylinder is not known, and the actual wall thickness cannot be measured, the cylinder shall be rejected if corrosion exceeds one thirty-second inch in depth. This is arrived at by subtracting from the minimum allowable wall at manufacture (0.221 inch), the limiting wall in service (0.195 inch), to give the maximum allowable corrosion limit of 0.026 inch, the equivalent of one thirty-second inch.

(c) When the wall thickness is known, or the actual wall thickness is measured, the difference between this known wall and the limiting value establishes the maximum corrosion figure. The normal hot forged cylinder of this size will have a measured wall of about 0.250 inch. Comparison of this with the limiting wall thickness shows that defects up to about one-sixteenth inch are allowable provided, of course, that the actual wall is measured or is known.

(d) Cylinders with general corrosion are evaluated by subjecting them to a hydrostatic test. Thus, a cylinder with an elastic expansion of 227 cc. or greater shall be rejected. If areas of pronounced pitting are included within the general corrosion, the depth of such pitting should also be measured (with the high spots of the actual surface as a reference plane) and the criteria established in the first example apply. Thus, the maximum corrosion limit would be one thirty-second inch when the wall was not known.

(e) Any defect of appreciable depth having a sharp bottom is a stress raiser and even though a cylinder may be acceptable from a stress standpoint, it is common practice to remove such defects. After any such repair operation, verification of the cylinder strength and structure shall be made by a hydrostatic test of other suitable means.

(f) Dents can be tolerated when the cylinder wall is not deformed excessively or abruptly. Generally speaking, dents are accepted up to a depth of about one-sixteenth inch when the major diameter of the dent is equal to or greater than 32 times the depth of the dent. Sharper dents than this are considered too abrupt and shall require rejection of the cylinder. On small diameter cylinders these general rules may have to be adjusted. Considerations of appearance play a major factor in the evaluation of dents.

(g) Cylinders with arc or torch burns shall be removed from service. Defects of this nature may be recognized by one of the following conditions:

(i) Removal of metal by scarfing or cratering.

(ii) A sentering or burning of the base metal.

(iii) A hardened heat affected zone. A simple method for verifying the presence of small arc burns is to file the suspected area. The hardened heat affected zone. A simple method for verifying the presence of small arc burns is to file the suspected area. The hardened zone will resist filing as compared to the softer base metal.

(h) Cylinders are normally produced with a symmetrical shape. Cylinders with distinct visual bulges shall be removed from service until the nature of the defect is determined. Some cylinders may have small discontinuities related to the manufacturing process – mushroomed bottoms, offset shoulders, etc. These usually can be identified and are not normally cause for concern.

(i) Cylinders shall be carefully inspected for evidences of exposure to fire. (See WAC 296-24-92005 (3)(j).)

(j) Cylinder necks shall be examined for serious cracks, folds, and flaws. (See WAC 296-24-92005 (3)(l) and (m).)

[Order 73-5, § 296-24-92009, filed 5/9/73 and Order 73-4, § 296-24-92009, filed 5/7/73.]

WAC 296-24-92011 Internal inspection. (1) Cylinders shall be inspected internally at least every time the cylinder is periodically retested. This examination shall be made with a light of sufficient intensity to clearly illuminate the interior walls.

(2) A hammer test consists of tapping a cylinder a light blow with a suitably sized hammer. A cylinder, emptied of liquid content, with a clean internal surface, standing free, will have a clear ring. Cylinders with internal corrosion will give a duller ring dependent upon the amount of corrosion and accumulation of foreign material. Such cylinders shall be investigated. The hammer test is very sensitive and is an easy, quick, and convenient test that can be made without removing the valve before each charging. It is an invaluable indicator of internal corrosion.

[Order 73-5, § 296-24-92011, filed 5/9/73 and Order 73-4, § 296-24-92011, filed 5/7/73.]

WAC 296-24-930 Safety relief devices for compressed gas cylinders.

[Order 73-5, § 296-24-930, filed 5/9/73 and Order 73-4, § 296-24-930, filed 5/7/73.]

WAC 296-24-93001 Definitions. (1) Safety relief device. A "safety relief device" is a device intended to prevent rupture of a cylinder under certain conditions of exposures. (The term as used herein shall include the approach channel, the operating parts, and the discharge channel.)

(2) Approach channel. An "approach channel" is the passage or passages through which gas must pass from the cylinder to reach the operating parts of the safety relief device.

(3) Discharge channel. A "discharge channel" is the passage or passages beyond the operating parts through which gas must pass to reach the atmosphere exclusive of any piping attached to the outlet of the device.

(4) Safety relief device channel. A "safety relief device channel" is the channel through which gas released by operation of the device must pass from the cylinder to the atmosphere exclusive of any piping attached to the inlet or outlet of the device.

(5) Operating part. The "operating part" of a safety relief device is the part of a safety relief device that normally closes the safety discharge channel but when moved from this position as a result of the action of heat or pressure, or a combination of the two, permits escape of gas from the cylinder.

(6) Frangible disc. A "frangible disc" is an operating part in the form of a disc, usually of metal and which is so held as to close the safety relief device channel under normal conditions. The disc is intended to burst at a predetermined pressure to permit the escape of gas.

(7) Pressure opening. A "pressure opening" is the orifice against which the frangible disc functions.

(8) Rated bursting pressure. A "rated bursting pressure" of a frangible disc is the maximum pressure for which the disc is designed to burst when in contact with the pressure opening for which it was designed when tested.

(9) Fusible plug. A "fusible plug" is an operating part in the form of a plug of suitable low melting material, usually a metal alloy, which closes the safety relief device channel under normal conditions and is intended to yield or melt at a predetermined temperature to permit the escape of gas.

(10) Yield temperature. The "yield temperature" of a fusible plug is the temperature at which the fusible metal or alloy will yield when tested.

(11) Reinforced fusible plug. A "reinforced fusible plug" is a fusible plug consisting of a core of suitable material having a comparatively high yield temperature surrounded by a low-melting point fusible metal of the required yield temperature.

(12) Combination frangible disc-fusible plug. A "combination frangible disc-fusible plug" is a frangible disc in combination with a low melting point fusible metal, intended to prevent its bursting at its predetermined bursting pressure unless the temperature also is high enough to cause yielding or melting of the fusible metal

(13) Safety relief valve. A "safety relief valve" is a safety relief device containing an operating part that is held normally in a position closing the safety relief device channel by spring force and is intended to open and to close at predetermined pressures.

(14) Combination safety relief valve and fusible plug. A "combination safety relief valve and fusible plug" is a safety relief device utilizing a safety relief valve in combination with a fusible plug. This combination device may be an integral unit or separate units and is intended to open and to close at predetermined pressures or to open at a predetermined temperature.

(15) Set pressure. The "set pressure" of a safety relief valve is the pressure marked on the valve and at which it is set to start-to-discharge.

(16) Start-to-discharge pressure. The "start-to-discharge pressure" of a safety relief valve is the pressure at which the first bubble appears through a water seal of not over 4 inches in the outlet of the safety relief valve.

(17) Flow capacity. The "flow capacity" of a safety relief device is the capacity in cubic feet per minute of free air discharged at the required flow rating pressure.

(18) Flow rating pressure. The "flow rating pressure" is the pressure at which a safety relief device is rated for capacity.

(19) Nonliquefied compressed gas. A "nonliquefied compressed gas" is a gas, other than a gas in solution which under the charging pressure, is entirely gaseous at a temperature of 70°F.

(20) Liquefied compressed gas. A "liquefied compressed gas" is a gas which, under the charging pressure, is partially liquid at a temperature of 70°F. A flammable compressed gas which is normally nonliquefied at 70°F but which is partially liquid under the charging pressure and temperature, shall follow the requirements for liquefied compressed gases.

(21) Compressed gas in solution. A "compressed gas in solution" (Acetylene) is a nonliquefied gas which is dissolved in a solvent.

(22) Pressurized liquid compressed gas. A "pressurized liquid compressed gas" is a compressed gas other than a compressed gas in solution, which cannot be liquefied at a temperature of 70°F, and which is maintained in the liquid state at a pressure not less than 40 p.s.i.a. by maintaining the gas at a temperature less than 70°F.

(23) Test pressure of the cylinder. The "test pressure of the cylinder" is the minimum pressure at which a cylinder must be tested as prescribed in DOT specifications for compressed gas cylinders 41 CFR Ch. 1.

(24) Free air or free gas. "Free air" or "free gas" is air or gas measured at a pressure of 14.7 pounds per square inch absolute and a temperature of 60°F.

(25) DOT regulations. As used in these standards "DOT regulations" refers to the U.S. Department of Transportation Regulations for Transportation of Explosives and Other Dangerous Articles by Land and Water in Rail Freight, Express and Baggage Services and by Motor Vehicle (Highway) and Water, including Specifications for Shipping Containers, Code of Federal Regulations, Title 49, Parts 171 to 178.

[Order 73-5, § 296-24-93001, filed 5/9/73 and Order 73-4, § 296-24-93001, filed 5/7/73.]

WAC 296-24-93003 General requirements. (1) Application. Compressed gas cylinder, portable tanks, and cargo tanks shall have pressure relief devices installed and maintained in accordance with Compressed Gas Association Pamphlets S-1.1-1963 and 1965 addenda and S-1.2-1963.

(2) Types of safety relief devices. Types of safety relief devices as covered by this section are designated as follows:

(a) Type CG-1: Frangible disc.

(b) Type CG-2: Fusible plug or reinforced fusible plug utilizing a fusible alloy with yield temperature not over 170°F, nor less than 157°F (165°F nominal).

(c) Type CG-3: Fusible plug or reinforced fusible plug utilizing a fusible alloy with yield temperature not over 220°F, nor less than 208°F (212°F nominal).

(d) Type CG-4: Combination frangible disc-fusible plug, utilizing a fusible alloy with yield temperature not over 170°F, nor less than 157°F (165°F nominal).

(e) Type CG-5: Combination frangible disc-fusible plug, utilizing a fusible alloy with yield temperature not over 220°F, nor less than 208°F (212°F nominal).

(f) Type CG-7: Safety relief valve.

(g) Type CG-8: Combination safety relief valve and fusible plug.

(3) Specifications and tests. All safety relief devices covered by this section shall meet the design, construction, marking and test specification of the "Compressed Gas Association Safety Relief Device Standards Part 1-Cylinders for Compressed Gases: S1.1-1963."

(4) Specific requirements for safety relief devices.

(a) Compressed gas cylinders, which under the regulations of the department of transportation must be equipped with safety relief devices, shall be considered acceptable when equipped with devices of proper construction, location, and discharge capacity under the conditions prescribed in Table 1 of the Compressed Gas Associations Standard S-1.1-1963.

(b) Only replacement parts or assemblies provided by the manufacturer shall be used unless the advisability of interchange is proved by adequate tests.

(c) When a frangible disc is used with a compressed gas cylinder, the rated bursting pressure of the disc shall not exceed the minimum required test pressure of the cylinder with which the device is used, except for DOT-3E cylinders (49 CFR Ch. 1) the rated bursting pressure of the device shall not exceed 4,500 pounds per square inch gage (p.s.i.g.).

(d) When a safety relief valve is used on a compressed gas cylinder, the flow rating pressure shall not exceed the minimum required test pressure of the cylinder on which the safety relief valve is installed and the reseating pressure shall not be less than the pressure in a normally charged cylinder at 130°F.

(e) When fittings and piping are used on either the upstream or downstream side or both of a safety relief device or devices, the passages shall be so designed that the flow capacity of the safety relief device will not be reduced below the capacity required for the container on which the safety relief device assembly is installed, nor to the extent that the operation of the device could be impaired. Fittings, piping, and method of attachment shall be designed to withstand normal handling and the pressures developed when the device or devices function.

(f) No shutoff valve shall be installed between the safety relief devices and the cylinder.

(5) Maintenance requirements for safety relief devices.

(a) As a precaution to keep cylinder safety relief devices in reliable operating condition, care shall be taken in the handling or storing of compressed gas cylinders to avoid damage. Care shall also be exercised to avoid plugging by paint or other dirt accumulation of safety relief device channels or other parts which could interfere with the functioning of the device. Only qualified personnel shall be allowed to service safety relief devices.

(b) Each time a compressed gas cylinder is received at a point for refilling, all safety relief devices shall be examined externally for corrosion, damage, plugging of external safety relief device channels, and mechanical defects such as leakage or extrusion of fusible metal. If there is any doubt regarding the suitability of the safety relief device for service the cylinder shall not be filled until it is equipped with a suitable device.

[Order 73-5, § 296-24-93003, filed 5/9/73 and Order 73-4, § 296-24-93003, filed 5/7/73.]

WAC 296-24-935 Safety relief devices for cargo and portable tanks storing compressed gases.

[Order 73-5, § 296-24-935, filed 5/9/73 and Order 73-4, § 296-24-935, filed 5/7/73.]

WAC 296-24-93501 Definitions. (1) Cargo tank. A "cargo tank" means any container designed to be permanently attached to any motor vehicle or other highway vehicle and in which is to be transported any compressed gas. The term "cargo tank" shall not be construed to include any tank used solely for the purpose of supplying fuel for the propulsion of the vehicle or containers fabricated under specifications for cylinders.

(2) Portable tank. A "portable tank" means any container designed primarily to be temporarily attached to a motor vehicle, other vehicle, railroad car other than tank car, or marine vessel, and equipped with skids, mountings, or accessories to facilitate handling of the container by mechanical means, in which is to be transported any compressed gas. The term "portable tank" shall not be construed to include any cargo tank, any tank car tank or any tank of the DOT-106A and DOT-110A-W type.

(3) Safety relief device. A "safety relief device" means a device intended to prevent rupture of a container under certain conditions of exposure.

(4) Safety relief valve. A "safety relief valve" means a safety relief device containing an operating part that is held normally in a position closing the safety relief device channel by spring force and is intended to open and to close at predetermined pressures.

(5) Set pressure. The "set pressure" of a safety relief valve is the pressure marked on the valve and at which the valve is set to start–to–discharge.

(6) Start–to–discharge pressure. The "start–to–discharge pressure" of a safety relief valve is the pressure at which the first bubble appears through a water seal of not over 4 inches on the outlet of the valve.

Note: When the nature of the service requires the use of a metal–to–metal seat safety relief, valve, with or without secondary sealing means, the start–to–discharge pressure may be considered the pressure at which an audible discharge occurs.

(7) Resealing pressure. The "resealing pressure" of a safety relief valve is the pressure at which leakage ceases through a water seal of not over 4 inches on the outlet of the valve.

(8) Flow capacity. The "flow capacity" of a safety relief device is the capacity in cubic feet per minute of free air discharged at the required flow rating pressure.

(9) Flow rating pressure. The "flow rating pressure" means the pressure at which a safety relief device is rated for capacity.

(10) Free air or free gas. "Free air" or "free gas" means air or gas measured at a pressure of 14.7 pounds per square inch absolute and a temperature of 60°F.

(11) Frangible disc. A "frangible disc" means a safety relief device in the form of a disc, usually of metal, which is so held as to close the safety relief device channel under normal conditions. The disc is intended to burst at a predetermined pressure to permit the escape of gas.

(12) Fusible plug. A "fusible plug" means a safety relief device in the form of a plug of suitable low–melting material, usually a metal alloy, which closes the safety relief device channel under normal conditions and is intended to yield or melt at a predetermined temperature to permit the escape of gas.

(13) DOT design pressure. The "DOT design pressure" is identical to the term "maximum allowable working pressure" as used in the "code" and is the maximum gage pressure at the top of the tank in its operating position. To determine the minimum permissible thickness of physical characteristics of the different parts of the vessel, the static head of the lading shall be added to the DOT design pressure to determine the thickness of any specific part of the vessel. If vacuum insulation is used, the liquid container shall be designed for a pressure of 15 p.s.i. more than DOT design pressure, plus static head of the lading.

EXCEPTION: For containers constructed in accordance with paragraph U–68 or U–69 of section VIII of the ASME Boiler and Pressure Vessel Code, 1949 Edition, the maximum allowable working pressure for the purpose of these standards is considered to be 125 percent of the design pressure as provided in 49 CFR 173.315 of DOT regulations.

(14) Code. "Code" is defined as paragraph U–68, U–69, U–200, or U–201 of section VIII of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers, 1949 Edition, or section VIII of the Boiler and Pressure Vessel Code of the American Society of Mechanical Engineers, 1950, 1952, 1956, 1959, and 1962 Editions; or the Code for Unfired Pressure Vessels for Petroleum Liquids and Gases of the American Petroleum Institute and the American Society of Mechanical Engineers (API–ASME), 1951 Edition.

(15) DOT regulations. The "DOT regulations" refers to department of transportation regulations for transportation of explosives and other dangerous articles by land and water in rail freight, express and baggage services and by motor vehicle (highway) and water, including specifications for shipping containers, Code of Federal Regulations, Title 49, Parts 171 to 178.

[Order 73–5, § 296–24–93501, filed 5/9/73 and Order 73–4, § 296–24–93501, filed 5/7/73.]

WAC 296-24-93503 General requirements. (1) Application. See WAC 296–24–93003(1).

(2) Specifications and tests. All safety relief devices covered by these standards shall meet the design, construction, marking, and test specifications of the "Compressed Gas Association Safety Relief Device Standards Part 2–Cargo and Portable Tanks for Compressed Gases: S–1.2–1963."

(3) Specific requirements for safety relief devices.

(a) Each container shall be provided with one or more safety relief devices which, unless otherwise specified, shall be safety relief valves of the spring–loaded type.

(b) Safety relief valves shall be set to start–to–discharge at a pressure not in excess of 110 percent of the DOT design pressure of the container nor less than the DOT design pressure of the container except as follows:

(i) If an overdesigned container is used, the set pressure of the safety relief valve may be between the minimum required DOT design pressure for the lading and 110 percent of the DOT design pressure of the container used.

(ii) For sulfur dioxide containers, a minimum set pressure of 120 and 110 p.s.i.g. is permitted for the 150 and 125 p.s.i.g. DOT design pressure containers, respectively.

(iii) For carbon dioxide (refrigerated), nitrous oxide (refrigerated), and pressurized liquid argon, nitrogen and oxygen, there shall be no minimum set pressure.

(iv) For butadiene, inhibited, and liquefied petroleum gas containers, a minimum set pressure of 90 percent of the minimum design pressure permitted for these ladings may be used.

(v) For containers constructed in accord with paragraph U–68 or U–69 of the Code 1949 Edition, the set pressure marked on the safety relief valve may be 125 percent of the original DOT design pressure of the container.

(c) Only replacement parts or assemblies provided by the manufacturer of the device shall be used unless the suitability of interchange is proved by adequate tests.

(d) Safety relief valves shall have direct communication with the vapor space of the container.

(e) Any portion of liquid piping or hose which at any time may be closed at each end must be provided with a safety relief device to prevent excessive pressure.

(f) The additional restrictions of this subdivision apply to safety relief devices on containers for carbon dioxide or nitrous oxide which are shipped in refrigerated and insulated containers. The maximum operating pressure in the container may be regulated by the use of one or more pressure controlling devices, which devices shall not be in lieu of the safety relief valve required in WAC 296-24-93503 (3)(a).

(g) All safety relief devices shall be so installed and located that the cooling effect of the contents will not prevent the effective operation of the device.

(h) In addition to the safety relief valves required by WAC 296-24-93503 (3)(a) each container for carbon dioxide may be equipped with one or more frangible disc safety relief devices of suitable design set to function at a pressure not exceeding two times the DOT design pressure of the container.

(i) Subject to conditions of 49 CFR 173.315(a)(1) (DOT regulations) for methyl chloride and sulfur dioxide optional portable tanks of 225 p.s.i.g. minimum DOT design pressure, one or more fusible plugs approved by the Bureau of Explosives, 63 Vesey Street, New York, NY 10007, may be used in lieu of safety relief valves of the spring-loaded type. If the container is over 30 inches long a safety relief device having the total required flow capacity must be at both ends.

(j) When storage containers for liquefied petroleum gas are permitted to be shipped in accordance with 49 CFR 173.315(j) (DOT regulations), they must be equipped with safety relief devices in compliance with the requirements for safety relief devices on above-ground containers as specified in the National Fire Protection Association Pamphlet No. 58-1969 "Standard for the Storage and Handling of Liquefied Petroleum Gases."

(k) When containers are filled by pumping equipment which has a discharge capacity in excess of the capacity of the container safety relief devices, and which is capable of producing pressures in excess of DOT design pressure of the container, precautions should be taken to prevent the development of pressures in the container in excess of 120 percent of its DOT design pressure. This may be done by providing additional capacity of the safety relief valves on the container, by providing a bypass on the pump discharge, or by any other suitable method.

(l) This additional requirement applies to safety relief devices on containers for liquefied hydrogen and pressurized liquid argon, nitrogen, and oxygen. The liquid container shall be protected by one or more safety relief valves and one or more frangible discs.

(m) Safety relief devices shall be arranged to discharge unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container. Safety relief devices shall be arranged to discharge upward except this is not required for carbon dioxide, nitrous oxide and pressurized liquid argon, nitrogen, and oxygen.

(n) No shutoff valves shall be installed between the safety relief devices and the container except, in cases where two or more safety relief devices are installed on the same container, a shutoff valve may be used where the arrangement of the shutoff valve or valves is such as always to insure full required capacity flow through at least one safety relief device.

(4) Maintenance requirements for safety relief devices. (a) Care shall be exercised to avoid damage to safety relief devices. Care shall also be exercised to avoid plugging by paint or other dirt accumulation of safety relief device channels or other parts which could interfere with the functioning of the device.

(b) Only qualified personnel shall be allowed to service safety relief devices. Any servicing or repairs which require resetting of safety relief valves shall be done only by or after consultation with the valve manufacturer.

(c) Safety relief devices periodically shall be examined externally for corrosion damage, plugging of external safety relief device channels, and mechanical defects such as leakage or extrusion of fusible metal. Valves equipped with secondary resilient seals shall have the seals inspected periodically. If there is any doubt regarding the suitability of the safety relief device for service the container shall not be filled until it is equipped with a suitable safety relief device.

[Order 73-5, § 296-24-93503, filed 5/9/73 and Order 73-4, § 296-24-93503, filed 5/7/73.]

WAC 296-24-940 Air receivers.

[Order 73-5, § 296-24-940, filed 5/9/73 and Order 73-4, § 296-24-940, filed 5/7/73.]

WAC 296-24-94001 General requirements. (1) Application. These standards apply to compressed air receivers, and other equipment used in providing and utilizing compressed air for performing operations such as cleaning, drilling, hoisting, and chipping. On the other hand, however, this section does not deal with the special problems created by using compressed air to convey materials nor the problems created when men work in compressed air as in tunnels and caissons. These standards are not intended to apply to compressed air machinery and equipment used on transportation vehicles such as steam railroad cars, electric railway cars, and automotive equipment.

(2) New and existing equipment.

(a) All new air receivers installed after the effective date of these standards shall be constructed in accordance with the 1968 Edition of the A.S.M.E. Boiler and Pressure Vessel Code, section VIII.

(b) All safety valves used shall be constructed, installed, and maintained in accordance with the A.S.M.E. Boiler and Pressure Vessel Code, section VIII edition 1968.

[Order 73-5, § 296-24-94001, filed 5/9/73 and Order 73-4, § 296-24-94001, filed 5/7/73.]

WAC 296-24-94003 Installation and equipment requirements. (1) Installation. Air receivers shall be so installed that all drains, handholes, and manholes therein

are easily accessible. Air receivers should be supported with sufficient clearance to permit a complete external inspection and to avoid corrosion of external surfaces. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place. The receiver should be located as close to the compressor or after-cooler as is possible in order to keep the discharge pipe short.

(2) Drains and traps. A drain pipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.

(3) Gages and valves.

(a) Every air receiver shall be equipped with an indicating pressure gage (so located as to be readily visible) and with one or more spring-loaded safety valves. The total relieving capacity of such safety valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.

(b) No valve of any type shall be placed between the air receiver and its safety valve or valves.

(c) Safety appliances, such as safety valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.

(d) All safety valves shall be tested frequently and at regular intervals to determine whether they are in good operating condition.

[Order 73-5, § 296-24-94003, filed 5/9/73 and Order 73-4, § 296-24-94003, filed 5/7/73.]

Part L
ELECTRICAL

WAC

296-24-956 Electrical.
296-24-95601 Definitions applicable to WAC 296-24-956 through 296-24-95615.
296-24-95603 Electric utilization systems.
296-24-95605 General requirements.
296-24-95607 Wiring design and protection.
296-24-95609 Wiring methods, components, and equipment for general use.
296-24-95611 Specific purpose equipment and installations.
296-24-95613 Hazardous (classified) locations.
296-24-95615 Special systems.
296-24-95617 Effective date.
296-24-95699 Appendices.
296-24-960 Proximity to overhead power lines.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS SUBCHAPTER

296-24-950 Electrical—Application. [Order 74-27, § 296-24-950, filed 5/7/74.] Repealed by 83-24-013 (Order 83-34), filed 11/30/83. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-24-955 National Electrical Code. [Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 42.30 and 43.22 RCW. 80-17-015 (Order 80-21), § 296-24-955, filed 11/13/80; 78-12-017 (Order 78-22), § 296-24-955, filed 11/13/78; Order 77-12, § 296-24-955, filed 7/11/77; Order 74-27, § 296-24-955, filed 5/7/74.] Repealed by 82-08-026 (Order 82-10), filed 3/30/82. Statutory Authority: RCW 49.17.040 and 49.17.050.

WAC 296-24-956 Electrical. This section addresses electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-956, filed 3/30/82.]

WAC 296-24-95601 Definitions applicable to WAC 296-24-956 through 296-24-95615. Unless the context indicates otherwise, words used in this section shall have the meaning given.

(1) **Acceptable.** An installation or equipment is acceptable to the director of labor and industries, and approved within the meaning of this section:

(a) If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc. and Factory Mutual Engineering Corp; or

(b) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency, or by a state, municipal, or other local authority responsible for enforcing occupational safety provisions of the National Electrical Code, and found in compliance with the provisions of the National Electrical Code as applied in this section; or

(c) With respect to custom-made equipment or related installations which are designed, fabricated for, and intended for use by a particular customer, if it is determined to be safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director and his authorized representatives.

(2) **Accepted.** An installation is "accepted" if it has been inspected and found by a nationally recognized testing laboratory to conform to specified plans or to procedures of applicable codes.

(3) **Accessible.** (As applied to wiring methods.) Capable of being removed or exposed without damaging the building structure of finish, or not permanently closed in by the structure or finish of the building. (See "concealed" and "exposed.")

(4) **Accessible.** (As applied to equipment.) Admitting close approach; not guarded by locked doors, elevation, or other effective means. (See "readily accessible.")

(5) **Ampacity.** Current-carrying capacity of electric conductors expressed in amperes.

(6) **Appliances.** Utilization equipment, generally other than industrial, normally built in standardized sizes or types, which is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc.

(7) **Approved.** Acceptable to the authority enforcing this section. The authority enforcing this section is the director of labor and industries. The definition of "acceptable" indicates what is acceptable to the director

and therefore approved within the meaning of this section.

(8) **Approved for the purpose.** Approved for a specific purpose, environment, or application described in a particular standard requirement.

Suitability of equipment or materials for a specific purpose, environment or application may be determined by a nationally recognized testing laboratory, inspection agency or other organization concerned with product evaluation as part of its listing and labeling program. (See "labeled" or "listed.")

(9) **Armored cable.** Type AC armored cable is a fabricated assembly of insulated conductors in a flexible metallic enclosure.

(10) **Askarel.** A generic term for a group of nonflammable synthetic chlorinated hydrocarbons used as electrical insulating media. Askarels of various compositional types are used. Under arcing conditions the gases produced, while consisting predominantly of noncombustible hydrogen chloride, can include varying amounts of combustible gases depending upon the askarel type.

(11) **Attachment plug (plug cap) (cap).** A device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.

(12) **Automatic.** Self-acting, operating by its own mechanism when actuated by some impersonal influence, as, for example, a change in current strength, pressure, temperature, or mechanical configuration.

(13) **Bare conductor, see "conductor."**

(14) **Bonding.** The permanent joining of metallic parts to form an electrically conductive path which will assure electrical continuity and the capacity to conduct safely any current likely to be imposed.

(15) **Bonding jumper.** A reliable conductor to assure the required electrical conductivity between metal parts required to be electrically connected.

(16) **Branch circuit.** The circuit conductors between the final overcurrent device protecting the circuit and the outlet(s).

(17) **Building.** A structure which stands alone or which is cut off from adjoining structures by fire walls with all openings therein protected by approved fire doors.

(18) **Cabinet.** An enclosure designed either for surface or flush mounting, and provided with a frame, mat, or trim in which a swinging door or doors are or may be hung.

(19) **Cable tray system.** A cable tray system is a unit or assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a rigid structural system used to support cables. Cable tray systems include ladders, troughs, channels, solid bottom trays, and other similar structures.

(20) **Cablebus.** Cablebus is an approved assembly of insulated conductors with fittings and conductor terminations in a completely enclosed, ventilated, protective metal housing.

(21) **Center pivot irrigation machine.** A center pivot irrigation machine is a multimotored irrigation machine which revolves around a central pivot and employs alignment switches or similar devices to control individual motors.

(22) **Certified.** Equipment is "certified" if it (a) has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards or to be safe for use in a specified manner, or (b) is of a kind whose production is periodically inspected by a nationally recognized testing laboratory, and (c) it bears a label, tag, or other record of certification.

(23) **Circuit breaker.**

(a) **(600 volts nominal, or less.)** A device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without injury to itself when properly applied within its rating.

(b) **(Over 600 volts, nominal.)** A switching device capable of making, carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuit.

(24) **Class I locations.** Class I locations are those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitible mixtures. Class I locations include the following:

(a) **Class I, Division 1.** A Class I, Division 1 location is a location:

(i) In which hazardous concentrations of flammable gases or vapors may exist under normal operating conditions; or

(ii) In which hazardous concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or because of leakage; or

(iii) In which breakdown or faulty operation of equipment or processes might release hazardous concentrations of flammable gases or vapors, and might also cause simultaneous failure of electric equipment.

Note: This classification usually includes locations where volatile flammable liquids or liquefied flammable gases are transferred from one container to another; interiors of spray booths and areas in the vicinity of spraying and painting operations where volatile flammable solvents are used; locations containing open tanks or vats of volatile flammable liquids; drying rooms or compartments for the evaporation of flammable solvents; locations containing fat and oil extraction equipment using volatile flammable solvents; portions of cleaning and dyeing plants where flammable liquids are used; gas generator rooms and other portions of gas manufacturing plants where flammable gas may escape; inadequately ventilated pump rooms for flammable gas or for volatile flammable liquids; the interiors of refrigerators and freezers in which volatile flammable materials are stored in open, lightly stoppered, or easily ruptured containers; and all other locations where ignitible concentrations of flammable vapors or gases are likely to occur in the course of normal operations.

(b) **Class I, Division 2.** A Class I, Division 2 location is a location:

(i) In which volatile flammable liquids or flammable gases are handled, processed, or used, but in which the hazardous liquids, vapors, or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture

or breakdown of such containers or systems, or in case of abnormal operation of equipment; or

(ii) In which hazardous concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operations of the ventilating equipment; or

(iii) That is adjacent to a Class I, Division 1 location, and to which hazardous concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

Note: This classification usually includes locations where volatile flammable liquids or flammable gases or vapors are used, but which would become hazardous only in case of an accident or of some unusual operating condition. The quantity of flammable material that might escape in case of accident, the adequacy of ventilating equipment, the total area involved, and the record of the industry or business with respect to explosions or fires are all factors that merit consideration in determining the classification and extent of each location.

Piping without valves, checks, meters, and similar devices would not ordinarily introduce a hazardous condition even though used for flammable liquids or gases. Locations used for the storage of flammable liquids or a liquefied or compressed gases in sealed containers would not normally be considered hazardous unless also subject to other hazardous conditions.

Electrical conduits and their associated enclosures separated from process fluids by a single seal or barrier are classed as a Division 2 location if the outside of the conduit and enclosures is a nonhazardous location.

(25) **Class II locations.** Class II locations are those that are hazardous because of the presence of combustible dust. Class II locations include the following:

(a) **Class II, Division 1.** A Class II, Division 1 location is a location:

(i) In which combustible dust is or may be in suspension in the air under normal operating conditions, in quantities sufficient to produce explosives or ignitible mixtures; or

(ii) Where mechanical failure or abnormal operation of machinery or equipment might cause such explosive or ignitible mixtures to be produced, and might also provide a source of ignition through simultaneous failure of electric equipment, operation of protection devices, or from other causes; or

(iii) In which combustible dusts of an electrically conductive nature may be present.

Note: This classification may include areas of grain handling and processing plants, starch plants, sugar-pulverizing plants, malting plants, hay-grinding plants, coal pulverizing plants, areas where metal dusts and powders are produced or processed, and other similar locations which contain dust producing machinery and equipment (except where the equipment is dust-tight or vented to the outside). These areas would have combustible dust in the air, under normal operating conditions, in quantities sufficient to produce explosive or ignitible mixtures. Combustible dusts which are electrically nonconductive include dusts produced in the handling and processing of grain and grain products, pulverized sugar and cocoa, dried egg and milk powders, pulverized spices, starch and pastes, potato and woodflour, oil meal from beans and seed, dried hay, and other organic materials which may produce combustible dusts when processed or handled. Dusts containing magnesium or aluminum are particularly hazardous and the use of extreme caution is necessary to avoid ignition and explosion.

(b) **Class II, Division 2.** A Class II, Division 2 location is a location in which:

(i) Combustible dust will not normally be in suspension in the air in quantities sufficient to produce explosive or ignitible mixtures; and dust accumulations are normally insufficient to interfere with the normal operation of electrical equipment or other apparatus; or

(ii) Dust may be in suspension in the air as a result of infrequent malfunctioning of handling or processing equipment, and dust accumulations resulting therefrom may be ignitible by abnormal operation or failure of electrical equipment or other apparatus.

Note: This classification includes locations where dangerous concentrations of suspended dust would not be likely but where dust accumulations might form on or in the vicinity of electric equipment. These areas may contain equipment from which appreciable quantities of dust would escape under abnormal operating conditions or be adjacent to a Class II Division 1 location, as described above, into which an explosive or ignitible concentration of dust may be put into suspension under abnormal operating conditions.

(26) **Class III locations.** Class III locations are those that are hazardous because of the presence of easily ignitible fibers or flyings but in which such fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitible mixtures. Class III locations include the following:

(a) **Class III, Division 1.** A Class III, Division 1 location is a location in which easily ignitible fibers or materials producing combustible flyings are handled, manufactured, or used.

Note: Such locations usually include some parts of rayon, cotton, and other textile mills; combustible fiber manufacturing and processing plants; cotton gins and cottonseed mills; flax-processing plants; clothing manufacturing plants; woodworking plants, and establishments; and industries involving similar hazardous processes or conditions.

Easily ignitible fibers and flyings include rayon, cotton (including cotton linters and cotton waste), sisal or henequen, istle, jute, hemp, tow, cocoa fiber, oakum, baled waste kapok, Spanish moss, excelsior, and other materials of similar nature.

(b) **Class III, Division 2.** A Class III, Division 2 location is a location in which easily ignitible fibers are stored or handled, except in process of manufacture.

(27) **Collector ring.** A collector ring is an assembly of slip rings for transferring electrical energy from a stationary to a rotating member.

(28) **Concealed.** Rendered inaccessible by the structure or finish of the building. Wires in concealed raceways are considered concealed, even though they may become accessible by withdrawing them. (See "accessible. (As applied to wiring methods.")).

(29) **Conductor.**

(a) **Bare.** A conductor having no covering or electrical insulation whatsoever.

(b) **Covered.** A conductor encased within material of composition or thickness that is not recognized as electrical insulation.

(c) **Insulated.** A conductor encased within material of composition and thickness that is recognized as electrical insulation.

(30) **Conduit body.** A separate portion of a conduit or tubing system that provides access through a removable cover(s) to the interior of the system at a junction of two or more sections of the system or at a terminal point of the system. Boxes such as FS and FD or larger cast or sheet metal boxes are not classified as conduit bodies.

(31) **Controller.** A device or group of devices that serves to govern, in some predetermined manner, the electric power delivered to the apparatus to which it is connected.

(32) **Cooking unit, counter-mounted.** A cooking appliance designed for mounting in or on a counter and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. (See "oven, wall-mounted.")

(33) **Covered conductor.** See "conductor."

(34) **Cutout.** (Over 600 volts, nominal.) An assembly of a fuse support with either a fuseholder, fuse carrier, or disconnecting blade. The fuseholder or fuse carrier may include a conducting element (fuse link), or may act as the disconnecting blade by the inclusion of an nonfusible member.

(35) **Cutout box.** An enclosure designed for surface mounting and having swinging doors or covers secured directly to and telescoping with the walls of the box proper. (See "cabinet.")

(36) **Damp location.** See "location."

(37) **Dead front.** Without live parts exposed to a person on the operating side of the equipment.

(38) **Device.** A unit of an electrical system which is intended to carry but not utilize electric energy.

(39) **Dielectric heating.** Dielectric heating is the heating of a nominally insulating material due to its own dielectric losses when the materials is placed in a varying electric filed.

(40) **Disconnecting means.** A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

(41) **Disconnecting (or isolating) switch.** (Over 600 volts, nominal.) A mechanical switching device used for isolating a circuit or equipment from a source of power.

(42) **Dry location.** See "location."

(43) **Electric sign.** A fixed, stationary, or portable self-contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.

(44) **Enclosed.** Surrounded by a case, housing, fence or walls which will prevent persons from accidentally contacting energized parts.

(45) **Enclosure.** The case or housing of apparatus, or the fence or walls surrounding an installation to prevent personnel from accidentally contacting energized parts, or to protect the equipment from physical damage.

(46) **Equipment.** A general term including material, fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electrical installation.

(47) **Equipment grounding conductor. See "grounding conductor, equipment."**

(48) **Explosion-proof apparatus.** Apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that it will not ignite a surrounding flammable atmosphere.

(49) **Exposed.** (As applied to live parts.) Capable of being inadvertently touched or approached nearer than a safe distance by a person. It is applied to parts not suitably guarded, isolated, or insulated. (See "accessible" and "concealed.")

(50) **Exposed.** (As applied to wiring methods.) On or attached to the surface or behind panels designed to allow access. (See "accessible. (As applied to wiring methods."))

(51) **Exposed.** (For the purpose of WAC 296-24-95615(5), communications systems.) Where the circuit is in such a position that in case of failure of supports or insulation, contact with another circuit may result.

(52) **Externally operable.** Capable of being operated without exposing the operator to contact with live parts.

(53) **Feeder.** All circuit conductors between the service equipment, or the generator switchboard of an isolated plant, and the final branch-circuit overcurrent device.

(54) **Fitting.** An accessory such as a locknut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.

(55) **Fuse.** (Over 600 volts, nominal.) An overcurrent protective device with a circuit opening fusible part that is heated and severed by the passage of overcurrent through it. A fuse comprises all the parts that form a unit capable of performing the prescribed functions. It may or may not be the complete device necessary to connect it into an electrical circuit.

(56) **Ground.** A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.

(57) **Grounded.** Connected to earth or to some conducting body that serves in place of the earth.

(58) **Grounded, effectively.** (Over 600 volts, nominal.) Permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient ampacity that ground fault current which may occur cannot build up to voltages dangerous to personnel.

(59) **Grounded conductor.** A system or circuit conductor that is intentionally grounded.

(60) **Grounding conductor.** A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

(61) **Grounding conductor, equipment.** The conductor used to connect the noncurrent-carrying metal parts of

equipment, raceways, and other enclosures to the system grounded conductor and/or the grounding electrode conductor at the service equipment or at the source of a separately derived system.

(62) **Grounding electrode conductor.** The conductor used to connect the grounding electrode to the equipment grounding conductor and/or to the grounded conductor of the circuit at the service equipment or at the source of a separately derived system.

(63) **Ground-fault circuit-interrupter.** A device whose function is to interrupt the electric circuit to the load when a fault current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

(64) **Guarded.** Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.

(65) **Health care facilities.** Buildings or portions of buildings and mobile homes that contain, but are not limited to, hospitals, nursing homes, extended care facilities, clinics, and medical and dental offices, whether fixed or mobile.

(66) **Heating equipment.** For the purposes of WAC 296-24-95611(7), the term "heating equipment" includes any equipment used for heating purposes if heat is generated by induction or dielectric methods.

(67) **Hoistway.** Any shaftway, hatchway, well hole, or other vertical opening or space in which an elevator or dumbwaiter is designed to operate.

(68) **Identified.** Identified, as used in reference to a conductor or its terminal, means that such conductor or terminal can be readily recognized as grounded.

(69) **Induction heating.** Induction heating is the heating of a nominally conductive material due to its own I^2R losses when the material is placed in a varying electromagnetic field.

(70) **Insulated conductor.** See "conductor."

(71) **Interrupter switch.** (Over 600 volts, nominal.) A switch capable of making, carrying, and interrupting specified currents.

(72) **Irrigation machine.** An irrigation machine is an electrically driven or controlled machine, with one or more motors, not hand portable, and used primarily to transport and distribute water for agricultural purposes.

(73) **Isolated.** Not readily accessible to persons unless special means for access are used.

(74) **Isolated power system.** A system comprising an isolating transformer or its equivalent, a line isolation monitor, and its ungrounded circuit conductors.

(75) **Labeled.** Equipment is "labeled" if there is attached to it a label, symbol, or other identifying mark of a nationally recognized testing laboratory which, (a) makes periodic inspections of the production of such equipment, and (b) whose labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

(76) **Lighting outlet.** An outlet intended for the direct connection of a lampholder, a lighting fixture, or a pendant cord terminating in a lampholder.

(77) **Listed.** Equipment is "listed" if it is of a kind mentioned in a list which, (a) is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment, and (b) states such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

(78) **Location.**

(a) **Damp location.** Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses.

(b) **Dry location.** A location not normally subject to dampness or wetness. A location classified as dry may be temporarily subject to dampness or wetness, as in the case of a building under construction.

(c) **Wet location.** Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids, such as vehicle-washing areas, and locations exposed to weather and unprotected.

(79) **Medium voltage cable.** Type MV medium voltage cable is a single or multiconductor solid dielectric insulated cable rated 2000 volts or higher.

(80) **Metal-clad cable.** Type MC cable is a factory assembly of one or more conductors, each individually insulated and enclosed in a metallic sheath of interlocking tape, or a smooth or corrugated tube.

(81) **Mineral-insulated metal-sheathed cable.** Type MI mineral-insulated metal-sheathed cable is a factory assembly of one or more conductors insulated with a highly compressed refractory mineral insulation and enclosed in a liquidtight and gaslight continuous copper sheath.

(82) **Mobile x-ray.** X-ray equipment mounted on a permanent base with wheels and/or casters for moving while completely assembled.

(83) **Nonmetallic-sheathed cable.** Nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors having an outer sheath of moisture resistant, flame-retardant, nonmetallic material. Nonmetallic sheathed cable is manufactured in the following types:

(a) **Type NM.** The overall covering has a flame-retardant and moisture-resistant finish.

(b) **Type NMC.** The overall covering is flame-retardant, moisture-resistant, fungus-resistant, and corrosion-resistant.

(84) **Oil (filled) cutout.** (Over 600 volts, nominal.) A cutout in which all or part of the fuse support and its fuse link or disconnecting blade are mounted in oil with complete immersion of the contacts and the fusible portion of the conducting element (fuse link), so that arc interruption by severing of the fuse link or by opening of the contacts will occur under oil.

(85) **Open wiring on insulators.** Open wiring on insulators is an exposed wiring method using cleats, knobs, tubes, and flexible tubing for the protection and support of single insulated conductors run in or on buildings, and not concealed by the building structure.

(86) **Outlet.** A point on the wiring system at which current is taken to supply utilization equipment.

(87) **Outline lighting.** An arrangement of incandescent lamps or electric discharge tubing to outline or call attention to certain features such as the shape of a building or the decoration of a window.

(88) **Oven, wall-mounted.** An oven for cooking purposes designed for mounting in or on a wall or other surface and consisting of one or more heating elements, internal wiring, and built-in or separately mountable controls. (See "cooking unit, counter-mounted.")

(89) **Overcurrent.** Any current in excess of the rated current of equipment or the ampacity of a conductor. It may result from overload (see definition), short circuit, or ground fault. A current in excess of rating may be accommodated by certain equipment and conductors for a given set of conditions. Hence the rules for overcurrent protection are specific for particular situations.

(90) **Overload.** Operation of equipment in excess of normal, full load rating, or of a conductor in excess of rated ampacity which, when it persists for a sufficient length of time, would cause damage or dangerous overheating. A fault, such as a short circuit or ground fault, is not an overload. (See "overcurrent.")

(91) **Panelboard.** A single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front. (See "switchboard.")

(92) **Permanently installed decorative fountains and reflection pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage and are served by electrical circuits of any nature. These units are primarily constructed for their aesthetic value and not intended for swimming or wading.

(93) **Permanently installed swimming pools, wading and therapeutic pools.** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage whether or not served by electrical circuits of any nature.

(94) **Portable x-ray.** X-ray equipment designed to be hand-carried.

(95) **Power and control tray cable.** Type TC power and control tray cable is a factory assembly of two or more insulated conductors, with or without associated bare or covered grounding conductors under a nonmetallic sheath, approved for installation in cable trays, in raceways, or where supported by a messenger wire.

(96) **Power fuse.** (Over 600 volts, nominal.) See "fuse."

(97) **Power-limited tray cable.** Type PLTC nonmetallic-sheathed power limited tray cable is a factory assembly of two or more insulated conductors under a nonmetallic jacket.

(98) **Power outlet.** An enclosed assembly which may include receptacles, circuit breakers, fuseholders, fused switches, buses and watt-hour meter mounting means; intended to supply and control power to mobile homes, recreational vehicles or boats, or to serve as a means for distributing power required to operate mobile or temporarily installed equipment.

(99) **Premises wiring system.** That interior and exterior wiring, including power, lighting, control, and signal circuit wiring together with all of its associated hardware, fittings, and wiring devices, both permanently and temporarily installed, which extends from the load end of the service drop, or load end of the service lateral conductors to the outlet(s). Such wiring does not include wiring internal to appliances, fixtures, motors, controllers, motor control centers, and similar equipment.

(100) **Qualified person.** One familiar with the construction and operation of the equipment and the hazards involved.

(101) **Raceway.** A channel designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this subpart. Raceways may be of metal or insulating material, and the term includes rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible metal conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

(102) **Readily accessible.** Capable of being reached quickly for operation, renewal, or inspections, without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders, chairs, etc. (See "accessible.")

(103) **Receptacle.** A receptacle is a contact device installed at the outlet for the connection of a single attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is a single device containing two or more receptacles.

(104) **Receptacle outlet.** An outlet where one or more receptacles are installed.

(105) **Remote-control circuit.** Any electric circuit that controls any other circuit through a relay or an equivalent device.

(106) **Sealable equipment.** Equipment enclosed in a case or cabinet that is provided with a means of sealing or locking so that live parts cannot be made accessible without opening the enclosure. The equipment may or may not be operable without opening the enclosure.

(107) **Separately derived system.** A premises wiring system whose power is derived from generator, transformer, or converter winding and has no direct electrical connection, including a solidly connected grounded circuit conductor, to supply conductors originating in another system.

(108) **Service.** The conductors and equipment for delivering energy from the electricity supply system to the wiring system of the premises served.

(109) **Service cable.** Service conductors made up in the form of a cable.

(110) **Service conductors.** The supply conductors that extend from the street main or from transformers to the service equipment of the premises supplied.

(111) **Service drop.** The overhead service conductors from the last pole or other aerial support to and including the splices, if any, connecting to the service-entrance conductors at the building or other structure.

(112) **Service-entrance cable.** Service-entrance cable is a single conductor or multiconductor assembly provided with or without an overall covering, primarily used for services and of the following types:

(a) *Type SE*, having a flame-retardant, moisture-resistant covering, but not required to have inherent protection against mechanical abuse.

(b) *Type USE*, recognized for underground use, having a moisture-resistant covering, but not required to have a flame-retardant covering or inherent protection against mechanical abuse. Single-conductor cables having an insulation specifically approved for the purpose do not require an outer covering.

(113) **Service-entrance conductors, overhead system.** The service conductors between the terminals of the service equipment and a point usually outside the building, clear of building walls, where joined by tap or splice to the servicedrap.

(114) **Service entrance conductors, underground system.** The service conductors between the terminals of the service equipment and the point of connection to the service lateral. Where service equipment is located outside the building walls, there may be no service-entrance conductors, or they may be entirely outside the building.

(115) **Service equipment.** The necessary equipment, usually consisting of a circuit breaker or switch and fuses, and their accessories, located near the point of entrance of supply conductors to a building or other structure, or an otherwise defined area, and intended to constitute the main control and means of cutoff of the supply.

(116) **Service raceway.** The raceway that encloses the service-entrance conductors.

(117) **Shielded nonmetallic-sheathed cable.** Type SNM, shielded nonmetallic-sheathed cable is a factory assembly of two or more insulated conductors in an extruded core of moisture-resistant, flame-resistant metallic material, covered with an overlapping spiral metal tape and wire shield and jacketed with an extruded moisture-resistant, flame-resistant, oil-resistant, corrosion-resistant, fungus-resistant, and sunlight-resistant nonmetallic material.

(118) **Show window.** Any window used or designed to be used for the display of goods or advertising material, whether it is fully or partly enclosed or entirely open at the rear and whether or not it has a platform raised higher than the street floor level.

(119) **Sign.** See "electric sign."

(120) **Signaling circuit.** Any electric circuit that energizes signaling equipment.

(121) **Special permission.** The written consent of the authority having jurisdiction.

(122) **Storable swimming or wading pool.** A pool with a maximum dimension of 15 feet and a maximum wall height of 3 feet and is so constructed that it may be readily disassembled for storage and reassembled to its original integrity.

(123) **Switchboard.** A large single panel, frame, or assembly of panels which have switches, buses, instruments, overcurrent and other protective devices mounted on the face or back or both. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets. (See "panelboard.")

(124) **Switches.**

(a) **General-use switch.** A switch intended for use in general distribution and branch circuits. It is rated in amperes, and it is capable of interrupting its rated current at its rated voltage.

(b) **General-use snap switch.** A form of general-use switch so constructed that it can be installed in flush device boxes or on outlet box covers, or otherwise used in conjunction with wiring systems recognized by this subpart.

(c) **Isolating switch.** A switch intended for isolating an electric circuit from the source of power. It has no interrupting rating, and it is intended to be operated only after the circuit has been opened by some other means.

(d) **Motor-circuit switch.** A switch, rated in horsepower, capable of interrupting the maximum operating overload current of a motor of the same horsepower rating as the switch at the rated voltage.

(125) **Switching devices.** (Over 600 volts, nominal.) Devices designed to close and/or open one or more electric circuits. Included in this category are circuit breakers, cutouts, disconnecting (or isolating) switches, disconnecting means, interrupter switches, and oil (filled) cutouts.

(126) **Transportable x-ray.** X-ray equipment installed in a vehicle or that may readily be disassembled for transport in a vehicle.

(127) **Utilization equipment.** Utilization equipment means equipment which utilizes electric energy for mechanical, chemical, heating, lighting, or similar useful purpose.

(128) **Utilization system.** A utilization system is a system which provides electric power and light for employee workplaces, and includes the premises wiring system and utilization equipment.

(129) **Ventilated.** Provided with a means to permit circulation of air sufficient to remove an excess of heat, fumes, or vapors.

(130) **Volatile flammable liquid.** A flammable liquid having a flash point below 38 degrees C (100 degrees F) or whose temperature is above its flash point.

(131) **Voltage (of a circuit).** The greatest root-mean-square (effective) difference of potential between any two conductors of the circuit concerned.

(132) **Voltage, nominal.** A nominal value assigned to a circuit or system for the purpose of conveniently designating its voltage class (as 120/240, 480Y/277, 600, etc.). The actual voltage at which a circuit operates can vary from the nominal within a range that permits satisfactory operation of equipment.

(133) **Voltage to ground.** For grounded circuits, the voltage between the given conductor and that point or

conductor of the circuit that is grounded; for ungrounded circuits, the greatest voltage between the given conductor and any other conductor of the circuit.

(134) **Watertight.** So constructed that moisture will not enter the enclosure.

(135) **Weatherproof.** So constructed or protected that exposure to the weather will not interfere with successful operation. Rainproof, raintight, or watertight equipment can fulfill the requirements for weatherproof where varying weather conditions other than wetness, such as snow, ice, dust, or temperature extremes, are not a factor.

(136) **Wet location.** See "location."

(137) **Wireways.** Wireways are sheet-metal troughs with hinged or removable covers for housing and protecting electric wires and cable and in which conductors are laid in place after the wireway has been installed as a complete system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95601, filed 3/30/82.]

WAC 296-24-95603 Electric utilization systems. (1) **Scope.**

(a) **Covered.** The provisions of WAC 296-24-95603 through 296-24-95617 cover electrical installations and utilization equipment installed or used within or on buildings, structures, and other premises including:

(i) Yards;

(ii) Carnivals;

(iii) Parking and other lots;

(iv) Mobile homes;

(v) Recreational vehicles;

(vi) Industrial substations 750 volts and over, chapter 296-44 WAC, shall apply;

(vii) Conductors that connect the installations to a supply of electricity; and

(viii) Other outside conductors on the premises.

(b) **Not covered.** The provisions of WAC 296-24-95603 through 296-24-95617 do not cover:

(i) Installations in ships, watercraft, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles.

(ii) Installations underground in mines.

(iii) Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.

(iv) Installations of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.

(v) Installations under the exclusive control of electric utilities for the purpose of communication or metering; or for the generation, control, transformation, transmission, and distribution of electric energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(2) **Extent of application.**

(a) The requirements contained in the sections listed below shall apply to all electrical installations and utilization equipment, regardless of when they were designed or installed:

Sections:

WAC 296-24-95605(2)	Examination, installation, and use of equipment.
" " (3)	Splices.
" " (4)	Arcing parts.
" " (5)	Marking.
" " (6)	Identification of disconnecting means.
" " (7)(b)	Guarding of live parts.
WAC 296-24-95607 (5)(a)(i)	Protection of conductors and equipment.
" " (5)(a)(iv)	Location in or on premises.
" " (5)(a)(v)	Arcing or suddenly moving parts.
" " (6)(a)(ii)	2-Wire DC systems to be grounded.
" " (6)(a)(iii) and (iv)	AC systems to be grounded.
" " (6)(a)(v)	AC systems 50 to 1000 volts not required to be grounded.
" " (6)(c)	Grounding connections.
" " (6)(d)	Grounding path.
WAC 296-24-95607 (6)(e)(iv)(A) through (D)	Fixed equipment required to be grounded.
" " (6)(e)(v)	Grounding of equipment connected by cord and plug.
" " (6)(e)(vi)	Grounding or nonelectrical equipment.
" " (6)(f)(i)	Methods of grounding fixed equipment.
WAC 296-24-95609 (7)(a)(i) and (ii)	Flexible cords and cables, uses.
" " (7)(a)(iii)	Flexible cords and cables prohibited.
" " (7)(b)(ii)	Flexible cords and cables, splices.
" " (7)(b)(iii)	Pull at joints and terminals of flexible cords and cables.
WAC 296-24-95613	Hazardous (classified) locations.

(b) Every electric utilization system and all utilization equipment installed after March 15, 1972, and every major replacement, modification, repair, or rehabilitation, after March 15, 1972, of any part of any electric utilization system or utilization equipment installed before March 15, 1972, shall comply with the provisions of WAC 296-24-956 through 296-24-95617.

Note: "Major replacements, modifications, repairs, or rehabilitations" include work similar to that involved when a new building or facility is built, a new wing is added, or an entire floor is renovated.

(c) The following provisions apply to electric utilization systems and utilization equipment installed after (effective date of this section):

WAC 296-24-95605 (8)(d)(i) and (ii)	Entrance and access to work space (over 600 volts).
WAC 296-24-95607 (5)(a)(vi)(B)	Circuit breakers operated vertically.

"	" (5)(a)(vi)(C)	Circuit breakers used as switches.
"	" (6)(g)(ii)	Grounding of systems of 1000 volts or more supplying portable or mobile equipment.
WAC 296-24-95611	(3)(b)	Warning signs for elevators and escalators.
"	" (9)	Electrically controlled irrigation machines.
"	" (10)(e)	Ground-fault circuit interrupters for fountains.
WAC 296-24-95615	(1)(a)(ii)	Physical protection of conductors over 600 volts.
"	" (3)(b)	Marking of Class 2 and Class 3 power supplies.
"	" (4)	Fire protective signaling circuits.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95603, filed 3/30/82.]

WAC 296-24-95605 General requirements. (1) **Approval.** The conductors and equipment required or permitted by this section shall be acceptable only if approved.

(2) **Examination, installation, and use of equipment.**

(a) **Examination.** Electrical equipment shall be free from recognized hazards that are likely to cause death or serious physical harm to employees. Safety of equipment shall be determined using the following considerations:

(i) Suitability for installation and use in conformity with the provisions of this subpart. Suitability of equipment for an identified purpose may be evidenced by listing or labeling for that identified purpose.

(ii) Mechanical strength and durability, including, for parts designed to enclose and protect other equipment, the adequacy of the protection thus provided.

(iii) Electrical insulation.

(iv) Heating effects under conditions of use.

(v) Arcing effects.

(vi) Classification by type, size, voltage, current capacity, specific use.

(vii) Other factors which contribute to the practical safeguarding of employees using or likely to come in contact with the equipment.

(b) **Installation and use.** Listed or labeled equipment shall be used or installed in accordance with any instructions included in the listing or labeling.

(3) **Splices.** Conductors shall be spliced or joined with splicing devices suitable for the use or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be so spliced or joined as to be mechanically and electrically secure without solder and then soldered. All splices and joints and the free ends of conductors shall be covered with an insulation equivalent to that of the conductors or with an insulating device suitable for the purpose.

(4) **Arcing parts.** Parts of electric equipment which in ordinary operation produce arcs, sparks, flames, or molten metal shall be enclosed or separated and isolated from all combustible material.

(5) **Marking.** Electrical equipment may not be used unless the manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product may be identified is placed on the equipment. Other markings shall be provided giving voltage, current, wattage, or other ratings as necessary. The marking shall be of sufficient durability to withstand the environment involved.

(6) **Identification of disconnecting means and circuits.** Each disconnecting means required by this subpart for motors and appliances shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. Each service, feeder, and branch circuit, at its disconnecting means or overcurrent device, shall be legibly marked to indicate its purpose, unless located and arranged so the purpose is evident. These markings shall be of sufficient durability to withstand the environment involved.

(7) **600 volts, nominal, or less.**

(a) **Working space about electric equipment.** Sufficient access and working space shall be provided and maintained about all electric equipment to permit ready and safe operation and maintenance of such equipment.

(i) **Working clearances.** Except as required or permitted elsewhere, the dimension of the working space in the direction of access to live parts operating at 600 volts or less and likely to require examination, adjustment, servicing, or maintenance while alive may not be less than indicated in Table S-1. In addition to the dimensions shown in Table S-1, workspace may not be less than 30 inches wide in front of the electric equipment. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. Concrete, brick, or tile walls are considered to be grounded. Working space is not required in back of assemblies such as dead-front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

Table S-1—*Working clearances*

Nominal voltage to ground	Minimum clear distance for condition[2] (ft)		
	(a)	*(b)*	*(c)*
0-150	[1]3	[1]3	3
151-600	[1]3	3 1/2	4

[1]Minimum clear distances may be 2 feet 6 inches for installations built prior to effective date of this section.

[2]Conditions *(a)*, *(b)*, *(c)*, are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating material. Insulated wire or insulated

busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other side *(c)* Exposed live parts on both sides of the workspace (not guarded as provided in condition *(a)*) with the operator between.

(ii) **Clear spaces.** Working space required by this subpart may not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded.

(iii) **Access and entrance to working space.** At least one entrance of sufficient area shall be provided to give access to the working space about electric equipment.

(iv) **Front working space.** Where there are live parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment may not be less than 3 feet.

(v) **Illumination.** Illumination shall be provided for all working spaces about service equipment, switchboards, panelboards, and motor control centers installed indoors.

(vi) **Headroom.** The minimum headroom of working spaces about service equipment, switchboards, panelboards, or motor control centers shall be 6 feet 3 inches.

Note: As used in this section, a motor control center is an assembly of one or more enclosed sections having a common power bus and principally containing motor control units.

(b) **Guarding of live parts.**

(i) Except as required or permitted elsewhere in this section, live parts of electric equipment operating at 50 volts or more shall be guarded against accidental contact by approved cabinets or other forms of approved enclosures, or by any of the following means:

(A) By location in a room, vault, or similar enclosure that is accessible only to qualified persons.

(B) By suitable permanent, substantial partitions or screens so arranged that only qualified persons will have access to the space within reach of the live parts. Any openings in such partitions or screens shall be so sized and located that persons are not likely to come into accidental contact with live parts or to bring conducting objects into contact with them.

(C) By location on a suitable balcony, gallery, or platform so elevated and arranged as to exclude unqualified persons.

(D) By elevation of 8 feet or more above the floor or other working surface.

(ii) In locations where electric equipment would be exposed to physical damage, enclosures or guards shall be so arranged and of such strength as to prevent such damage.

(iii) Entrances to rooms and other guarded locations containing exposed live parts shall be marked with conspicuous warning signs forbidding unqualified persons to enter.

(8) **Over 600 volts, nominal.**

(a) **General.** Conductors and equipment used on circuits exceeding 600 volts, nominal, shall comply with all applicable provisions of subsections (1) through (7) of this section and with the following provisions which supplement or modify those requirements. The provisions of (b), (c) and (d) of this subsection do not apply to equipment on the supply side of the service conductors.

(b) **Enclosure for electrical installations.** Electrical installations in a vault, room, closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by lock and key or other approved means, are considered to be accessible to qualified persons only. A wall, screen, or fence less than 8 feet in height is not considered to prevent access unless it has other features that provide a degree of isolation equivalent to an 8 foot fence. The entrances to all buildings, rooms, or enclosures containing exposed live parts or exposed conductors operating at over 600 volts, nominal, shall be kept locked or shall be under the observation of a qualified person at all times.

(i) **Installations accessible to qualified persons only.** Electrical installations having exposed live parts shall be accessible to qualified persons only and shall comply with the applicable provisions of (c) of this subsection.

(ii) **Installations accessible to unqualified persons.** Electrical installations that are open to unqualified persons shall be made with metal-enclosed equipment or shall be enclosed in a vault or in an area, access to which is controlled by a lock. If metal-enclosed equipment is installed so that the bottom of the enclosure is less than 8 feet above the floor, the door or cover shall be kept locked. Metal-enclosed switchgear, unit substations, transformers, pull boxes, connection boxes, and other similar associated equipment shall be marked with appropriate caution signs. If equipment is exposed to physical damage from vehicular traffic, suitable guards shall be provided to prevent such damage. Ventilating or similar openings in metal-enclosed equipment shall be designed so that foreign objects inserted through these openings will be deflected from energized parts.

(c) **Workspace about equipment.** Sufficient space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment. Where energized parts are exposed, the minimum clear workspace may not be less than 6 feet 6 inches high (measured vertically from the floor or platform), or less than 3 feet wide (measured parallel to the equipment). The depth shall be as required in Table S-2. The workspace shall be adequate to permit at least a 90-degree opening of doors or hinged panels.

(i) **Working space.** The minimum clear working space in front of electric equipment such as switchboards, control panels, switches, circuit breakers, motor controllers, relays, and similar equipment may not be less than specified in Table S-2 unless otherwise specified in this subpart. Distances shall be measured from the live parts if they are exposed, or from the enclosure front or opening if the live parts are enclosed. However, working space is not required in back of equipment such as deadfront switchboards or control assemblies where there are no renewable or adjustable parts (such as fuses or switches) on the back and where all connections are accessible from locations other than the back. Where rear access is required to work on deenergized parts on the back of enclosed equipment, a minimum working space of 30 inches horizontally shall be provided.

Table S-2—*Minimum Depth of Clear Working Space in Front of Electric Equipment*

Nominal voltage to ground	Conditions[2](ft)		
	(a)	*(b)*	*(c)*
601 to 2,500	3	4	5
2,501 to 9,000	4	5	6
9,001 to 25,000	5	6	9
25,001 to 75kV[1]	6	8	10
Above 75kV[1]	8	10	12

[1]Minimum depth of clear working space in front of electric equipment with a nominal voltage to ground above 25,000 volts may be the same as for 25,000 volts under conditions *(a)*, *(b)* and *(c)* for installations built prior to April 16, 1981. (2) Conditions *(a)*, *(b)* and *(c)* are as follows: *(a)* Exposed live parts on one side and no live or grounded parts on the other side of the working space, or exposed live parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated busbars operating at not over 300 volts are not considered live parts. *(b)* Exposed live parts on one side and grounded parts on the other side. Concrete, brick, or tile walls will be considered as grounded surfaces. *(c)* Exposed live parts on both sides of the workspace not guarded as provided in condition (a) with the operator between.

(ii) **Illumination.** Adequate illumination shall be provided for all working spaces about electric equipment. The lighting outlets shall be so arranged that persons changing lamps or making repairs on the lighting system will not be endangered by live parts or other equipment. The points of control shall be so located that persons are not likely to come in contact with any live part or moving part of the equipment while turning on the lights.

(iii) **Elevation of unguarded live parts.** Unguarded live parts above working space shall be maintained at elevations not less than specified in Table S-3.

Table S-3—*Elevation of Unguarded Energized Parts Above Working Space*

Nominal voltage between phases	Minimum elevation
601 to 7,500	*8 feet 6 inches.
7,501 to 35,000	9 feet.
Over 35kV	9 feet + 0.37 inches per kV above 35kV.

*Note: Minimum elevation may be 8 feet 0 inches for installations if the nominal voltage between phases is in the range of 601–6600 volts.

(d) **Entrance and access to workspace.** (See WAC 296-24-95603 (2)(c).)

(i) At least one entrance not less than 24 inches wide and 6 feet 6 inches high shall be provided to give access to the working space about electric equipment. On switchboard and control panels exceeding 48 inches in width, there shall be one entrance at each end of such board where practicable. Where bare energized parts at any voltage or insulated energized parts above 600 volts are located adjacent to such entrance, they shall be suitably guarded.

(ii) Permanent ladders or stairways shall be provided to give safe access to the working space around electric equipment installed on platforms, balconies, mezzanine floors, or in attic or roof rooms or spaces.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95605, filed 3/30/82.]

WAC 296-24-95607 Wiring design and protection. (1) **Use and identification of grounded and grounding conductors.**

(a) **Identification of conductors.** A conductor used as a grounded conductor shall be identifiable and distinguishable from all other conductors. A conductor used as an equipment grounding conductor shall be identifiable and distinguishable from all other conductors.

(b) **Polarity of connections.** No grounded conductor may be attached to any terminal or lead so as to reverse designated polarity.

(c) **Use of grounding terminals and devices.** A grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug may not be used for purposes other than grounding.

(2) **Branch circuits.**

(a) **Ground-fault protection for personnel on construction sites.** The employer shall use either ground-fault circuit interrupters as specified in item (a)(i) of this subsection or an assured equipment grounding conductor program as specified in item (a)(ii) of this subsection, to protect employees on construction sites. These requirements are in addition to any other requirements for equipment grounding conductors.

(i) **Ground-fault circuit interrupters.** All 120-volt, single-phase, 15-ampere and 20-ampere receptacle outlets on construction sites, which are not a part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground-fault circuit interrupters for personnel protection. Receptacles on a two-wire, single-phase portable or vehicle-mounted generator rated not more than 5 kW, where the circuit conductors of the generator are insulated from the generator frame and all other grounded surfaces, need not be protected with ground-fault circuit interrupters.

(ii) **Assured equipment grounding conductor program.** The employer shall establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and equipment connected by cord and plug, which are available for use or used by employees. This program shall comply with the following minimum requirements:

(A) A written description of the program, including the specific procedures adopted by the employer, shall be

available at the jobsite for inspection and copying by the director and any affected employee.

(B) The employer shall designate one or more competent persons (as defined in WAC 296-155-012) to implement the program.

(C) Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indication of possible internal damage. Equipment found damaged or defective may not be used until repaired.

(D) The following tests shall be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord-connected and plug-connected equipment required to be grounded:

(I) All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

(II) Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

(E) All required tests shall be performed:

(I) Before first use;

(II) Before equipment is returned to service following any repairs;

(III) Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over); and

(IV) At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

(F) The employer may not make available or permit the use by employees of any equipment which has not met the requirements of this item (a)(ii) of this subsection.

(G) Tests performed as required in this section shall be recorded. This test record shall identify each receptacle, cord set, and cord-connected and plug-connected equipment that passed the test, and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means, and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection by the director and any affected employee.

(b) **Outlet devices.** Outlet devices shall have an ampere rating not less than the load to be served.

(3) **Outside conductors, 600 volts, nominal, or less.** Subdivisions (a), (b), (c) and (d) of this subsection apply to branch circuit, feeder, and service conductors rated 600 volts, nominal, or less and run outdoors as open conductors. Subdivision (e) of this subsection applies to lamps installed under such conductors.

(a) **Conductors on poles.** Conductors supported on poles shall provide a horizontal climbing space not less than the following:

(i) Power conductors below communication conductors—30 inches.

(ii) Power conductors alone or above communication conductors: 300 volts or less—24 inches; more than 300 volts—30 inches.

(iii) Communication conductors below power conductors with power conductors 300 volts or less—24 inches; more than 300 volts—30 inches.

(b) **Clearance from ground.** Open conductors shall conform to the following minimum clearances:

(i) 10 feet—above finished grade, sidewalks, or from any platform or projection from which they might be reached.

(ii) 12 feet—over areas subject to vehicular traffic other than truck traffic.

(iii) 15 feet—over areas other than those specified in item (b)(iv) of this subsection that are subject to truck traffic.

(iv) 18 feet—over public streets, alleys, roads, and driveways.

(c) **Clearance from building openings.** Conductors shall have a clearance of at least 3 feet from windows, doors, porches, fire escapes, or similar locations. Conductors run above the top level of a window are considered to be out of reach from that window and, therefore, do not have to be 3 feet away.

(d) **Clearance over roofs.** Conductors shall have a clearance of not less than 8 feet from the highest point of roofs over which they pass, except that:

(i) Where the voltage between conductors is 300 volts or less and the roof has a slope of not less than 4 inches in 12, the clearance from the roofs shall be at least 3 feet; or

(ii) Where the voltage between conductors is 300 volts or less and the conductors do not pass over more than 4 feet of the overhang portion of the roof and they are terminated at a through-the-roof raceway or approved support, the clearance from the roofs shall be at least 18 inches.

(e) **Location of outdoor lamps.** Lamps for outdoor lighting shall be located below all live conductors, transformers, or other electric equipment, unless such equipment is controlled by a disconnecting means that can be locked in the open position or unless adequate clearances or other safeguards are provided for relamping operations.

(4) **Services.**

(a) **Disconnecting means.**

(i) **General.** Means shall be provided to disconnect all conductors in a building or other structure from the service-entrance conductors. The disconnecting means shall plainly indicate whether it is in the open or closed position and shall be installed at a readily accessible location nearest the point of entrance of the service-entrance conductors.

(ii) **Simultaneous opening of poles.** Each service disconnecting means shall simultaneously disconnect all ungrounded conductors.

(b) **Services over 600 volts, nominal.** The following additional requirements apply to services over 600 volts, nominal.

(i) **Guarding.** Service–entrance conductors installed as open wires shall be guarded to make them accessible only to qualified persons.

(ii) **Warning signs.** Signs warning of high voltage shall be posted where other than qualified employees might come in contact with live parts.

(5) **Overcurrent protection.**

(a) **600 volts, nominal, or less.** The following requirements apply to overcurrent protection of circuits rated 600 volts, nominal, or less.

(i) **Protection of conductors and equipment.** Conductors and equipment shall be protected from overcurrent in accordance with their ability to safely conduct current.

(ii) **Grounded conductors.** Except for motor running overload protection, overcurrent devices may not interrupt the continuity of the grounded conductor unless all conductors of the circuit are opened simultaneously.

(iii) **Disconnection of fuses and thermal cutouts.** Except for service fuses, all cartridge fuses which are accessible to other than qualified persons and all fuses and thermal cutouts on circuits over 150 volts to ground shall be provided with disconnecting means. This disconnecting means shall be installed so that the fuse or thermal cutout can be disconnected from its supply without disrupting service to equipment and circuits unrelated to those protected by the overcurrent device.

(iv) **Location in or on premises.** Overcurrent devices shall be readily accessible to each employee or authorized building management personnel. These overcurrent devices may not be located where they will be exposed to physical damage nor in the vicinity of easily ignitible material.

(v) **Arcing or suddenly moving parts.** Fuses and circuit breakers shall be so located or shielded that employees will not be burned or otherwise injured by their operation.

(vi) **Circuit breakers.**

(A) Circuit breakers shall clearly indicate whether they are in the open (off) or closed (on) position.

(B) Where circuit breaker handles on switchboards are operated vertically rather than horizontally or rotationally, the up position of the handle shall be the closed (on) position. (See WAC 296–24–95603 (2)(c).)

(C) If used as switches in 120–volt, fluorescent lighting circuits, circuit breakers shall be approved for the purpose and marked "SWD." (See WAC 296–24–95603 (2)(c).)

(b) **Over 600 volts, nominal.** Feeders and branch circuits over 600 volts, nominal, shall have short–circuit protection.

(6) **Grounding.** Subdivisions (a) through (g) of this subsection contain grounding requirements for systems, circuits, and equipment.

(a) **Systems to be grounded.** The following systems which supply premises wiring shall be grounded:

(i) All 3–wire DC systems shall have their neutral conductor grounded.

(ii) Two–wire DC systems operating at over 50 volts through 300 volts between conductors shall be grounded unless:

(A) They supply only industrial equipment in limited areas and are equipped with a ground detector; or

(B) They are rectifier–derived from an AC system complying with items (a)(iii), (a)(iv), and (a)(v) of this subsection; or

(C) They are fire–protective signaling circuits having a maximum current of 0.030 amperes.

(iii) AC circuits of less than 50 volts shall be grounded if they are installed as overhead conductors outside of buildings or if they are supplied by transformers and the transformer primary supply system is ungrounded or exceeds 150 volts to ground.

(iv) AC systems of 50 volts to 1000 volts shall be grounded under any of the following conditions, unless exempted by item (a)(v) of this subsection:

(A) If the system can be so grounded that the maximum voltage to ground on the ungrounded conductors does not exceed 150 volts;

(B) If the system is nominally rated 480Y/277 volt, 3–phase, 4–wire in which the neutral is used as a circuit conductor;

(C) If the system is nominally rated 240/120 volt, 3–phase, 4–wire in which the midpoint of one phase is used as a circuit conductor; or

(D) If a service conductor is uninsulated.

(v) AC systems of 50 volts to 1000 volts are not required to be grounded under any of the following conditions:

(A) If the system is used exclusively to supply industrial electric furnaces for melting, refining, tempering, and the like.

(B) If the system is separately derived and is used exclusively for rectifiers supplying only adjustable speed industrial drives.

(C) If the system is separately derived and is supplied by a transformer that has a primary voltage rating less than 1000 volts, provided all of the following conditions are met:

(I) The system is used exclusively for control circuits;

(II) The conditions of maintenance and supervision assure that only qualified persons will service the installation;

(III) Continuity of control power is required; and

(IV) Ground detectors are installed on the control system.

(D) If the system is an isolated power system that supplies circuits in health care facilities.

(b) **Conductors to be grounded.** For AC premises wiring systems the identified conductor shall be grounded.

(c) **Grounding connections.**

(i) For a grounded system, a grounding electrode conductor shall be used to connect both the equipment grounding conductor and the grounded circuit conductor to the grounding electrode. Both the equipment grounding conductor and the grounding electrode conductor shall be connected to the grounded circuit conductor on the supply side of the service disconnecting means, or on the supply side of the system disconnecting means or overcurrent devices if the system is separately derived.

(ii) For an ungrounded service–supplied system, the equipment grounding conductor shall be connected to

the grounding electrode conductor at the service equipment. For an ungrounded separately derived system, the equipment grounding conductor shall be connected to the grounding electrode conductor at, or ahead of, the system disconnecting means or overcurrent devices.

(iii) On extensions of existing branch circuits which do not have an equipment grounding conductor, grounding–type receptacles may be grounded to a grounded cold water pipe near the equipment.

(d) **Grounding path.** The path to ground from circuits, equipment, and enclosures shall be permanent and continuous.

(e) **Supports, enclosures, and equipment to be grounded.**

(i) **Supports and enclosures for conductors.** Metal cable trays, metal raceways, and metal enclosures for conductors shall be grounded, except that:

(A) Metal enclosures such as sleeves that are used to protect cable assemblies from physical damage need not be grounded; or

(B) Metal enclosures for conductors added to existing installations of open wire, knob–and–tube wiring, and nonmetallic–sheathed cable need not be grounded if all of the following conditions are met:

(I) Runs are less than 25 feet;

(II) Enclosures are free from probable contact with ground, grounded metal, metal laths, or other conductive materials; and

(III) Enclosures are guarded against employee contact.

(ii) **Service equipment enclosures.** Metal enclosures for service equipment shall be grounded.

(iii) **Frames of ranges and clothes dryers.** Frames of electric ranges, wall–mounted ovens, counter–mounted cooking units, clothes dryers, and metal outlet or junction boxes which are part of the circuit for these appliances shall be grounded.

(iv) **Fixed equipment.** Exposed noncurrent–carrying metal parts of fixed equipment which may become energized shall be grounded under any of the following conditions:

(A) If within 8 feet vertically or 5 feet horizontally of ground or grounded metal objects and subject to employee contact.

(B) If located in a wet or damp location and not isolated.

(C) If in electrical contact with metal.

(D) If in a hazardous (classified) location.

(E) If supplied by a metal–clad, metal–sheathed, or grounded metal raceway wiring method.

(F) If equipment operates with any terminal at over 150 volts to the ground; however, the following need not be grounded:

(I) Enclosures for switches or circuit breakers used for other than service equipment and accessible to qualified persons only;

(II) Metal frames of electrically heated appliances which are permanently and effectively insulated from ground; and

(III) The cases of distribution apparatus such as transformers and capacitors mounted on wooden poles at a height exceeding 8 feet above ground or grade level.

(v) **Equipment connected by cord and plug.** Under any of the conditions described in subitems (e)(v)(A) through (e)(v)(C) of this subsection, exposed noncurrent–carrying metal parts of cord–connected and plug–connected equipment which may become energized shall be grounded.

(A) If in hazardous (classified) locations (see WAC 296–24–95613).

(B) If operated at over 150 volts to ground, except for guarded motors and metal frames of electrically heated appliances if the appliance frames are permanently and effectively insulated from ground.

(C) If the equipment is of the following types:

(I) Refrigerators, freezers, and air conditioners;

(II) Clothes–washing, clothes–drying and dishwashing machines, sump pumps, and electrical aquarium equipment;

(III) Hand–held motor–operated tools;

(IV) Motor–operated appliances of the following types: Hedge clippers, lawn mowers, snow blowers, and wet scrubbers;

(V) Cord–connected and plug–connected appliances used in damp or wet locations or by employees standing on the ground or on metal floors or working inside of metal tanks or boilers;

(VI) Portable and mobile x–ray and associated equipment;

(VII) Tools likely to be used in wet and conductive locations; and

(VIII) Portable hand lamps. Tools likely to be used in wet and conductive locations need not be grounded if supplied through an isolating transformer with an ungrounded secondary of not over 50 volts. Listed or labeled portable tools and appliances protected by an approved system of double insulation, or its equivalent, need not be grounded. If such a system is employed, the equipment shall be distinctively marked to indicate that the tool or appliance utilizes an approved system of double insulation.

(vi) **Nonelectrical equipment.** The metal parts of the following nonelectrical equipment shall be grounded: Frames and tracks of electrically operated cranes; frames of nonelectrically driven elevator cars to which electric conductors are attached; hand operated metal shifting ropes or cables of electric elevators, and metal partitions, grill work, and similar metal enclosures around equipment of over 750 volts between conductors.

(f) **Methods of grounding fixed equipment.**

(i) Noncurrent–carrying metal parts of fixed equipment, if required to be grounded by this section, shall be grounded by an equipment grounding conductor which is contained within the same raceway, cable, or cord, or runs with or encloses the circuit conductors. For DC circuits only, the equipment grounding conductor may be run separately from the circuit conductors.

(ii) Electric equipment is considered to be effectively grounded if it is secured to, and in electrical contact with, a metal rack or structure that is provided for its

support and the metal rack or structure is grounded by the method specified for the noncurrent–carrying metal parts of fixed equipment in item (f)(i) of this subsection. For installations made before (eff. date) only, electric equipment is also considered to be effectively grounded if it is secured to, and in metallic contact with, the grounded structural metal frame of a building. Metal car frames supported by metal hoisting cables attached to or running over metal sheaves or drums of grounded elevator machines are also considered to be effectively grounded.

(g) **Grounding of systems and circuits of 1000 volts and over (high voltage).**

(i) **General.** If high voltage systems are grounded, they shall comply with all applicable provisions of subdivisions (a) through (f) of this subsection as supplemented and modified by the subdivision (g) of this subsection.

(ii) **Grounding of systems supplying portable or mobile equipment.** (See WAC 296–24–95603 (2)(c).) Systems supplying portable or mobile high voltage equipment, other than substations installed on a temporary basis, shall comply with the following:

(A) Portable and mobile high voltage equipment shall be supplied from a system having its neutral grounded through an impedance. If a delta–connected high voltage system is used to supply the equipment, a system neutral shall be derived.

(B) Exposed noncurrent–carrying metal parts of portable and mobile equipment shall be connected by an equipment grounding conductor to the point at which the system neutral impedance is grounded.

(C) Ground–fault detection and relaying shall be provided to automatically deenergize any high voltage system component which has developed a ground fault. The continuity of the equipment grounding conductor shall be continuously monitored so as to deenergize automatically the high voltage feeder to the portable equipment upon loss of continuity of the equipment grounding conductor.

(D) The grounding electrode to which the portable or mobile equipment system neutral impedance is connected shall be isolated from and separated in the ground by at least 20 feet from any other system or equipment grounding electrode, and there shall be no direct connection between the grounding electrodes, such as buried pipe, fence, etc.

(iii) **Grounding of equipment.** All noncurrent–carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures, and supporting structures shall be grounded. However, equipment which is guarded by location and isolated from ground need not be grounded. Additionally, pole–mounted distribution apparatus at a height exceeding 8 feet above ground or grade level need not be grounded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–24–95607, filed 3/30/82.]

WAC 296–24–95609 Wiring methods, components, and equipment for general use. (1) **Wiring methods.** The provisions of this section do not apply to the conductors that are an integral part of factory–assembled equipment.

(a) **General requirements.**

(i) **Electrical continuity of metal raceways and enclosures.** Metal raceways, cable armor, and other metal enclosures for conductors shall be metallically joined together into a continuous electric conductor and shall be so connected to all boxes, fittings, and cabinets as to provide effective electrical continuity.

(ii) **Wiring in ducts.** No wiring systems of any type shall be installed in ducts used to transport dust, loose stock or flammable vapors. No wiring system of any type may be installed in any duct used for vapor removal or for ventilation of commercial–type cooking equipment, or in any shaft containing only such ducts.

(b) **Temporary wiring.** Temporary electrical power and lighting wiring methods may be of a class less than would be required for a permanent installation. Except as specifically modified in this paragraph, all other requirements of this subpart for permanent wiring shall apply to temporary wiring installations.

(i) **Uses permitted, 600 volts, nominal or less.** Temporary electrical power and lighting installations 600 volts, nominal, or less may be used only:

(A) During and for remodeling, maintenance, repair, or demolition of buildings, structures, or equipment, and similar activities;

(B) For experimental or development work; and

(C) For a period not to exceed 90 days for Christmas decorative lighting, carnivals, and similar purposes.

(ii) **Uses permitted, over 600 volts, nominal.** Temporary wiring over 600 volts, nominal, may be used only during periods of tests, experiments, or emergencies.

(iii) **General requirements for temporary wiring.**

(A) Feeders shall originate in an approved distribution center. The conductors shall be run as multiconductor cord or cable assemblies, or, where not subject to physical damage, they may be run as open conductors on insulators not more than 10 feet apart.

(B) Branch circuits shall originate in an approved power outlet or panelboard. Conductors shall be multiconductor cord or cable assemblies or open conductors. If run as open conductors they shall be fastened at ceiling height every 10 feet. No branch–circuit conductor may be laid on the floor. Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor if run as open conductors.

(C) Receptacles shall be of the grounding type. Unless installed in a complete metallic raceway, each branch circuit shall contain a separate equipment grounding conductor and all receptacles shall be electrically connected to the grounding conductor.

(D) No bare conductors nor earth returns may be used for the wiring of any temporary circuit.

(E) Suitable disconnecting switches or plug connectors shall be installed to permit the disconnection of all ungrounded conductors of each temporary circuit.

(F) Lamps for general illumination shall be protected from accidental contact or breakage. Protection shall be provided by elevation of at least 7 feet from normal

working surface or by a suitable fixture lampholder with a guard.

(G) Flexible cords and cables shall be protected from accidental damage. Sharp corners and projections shall be avoided. Where passing through doorways or other pinch points, flexible cords and cables shall be provided with protection to avoid damage.

(c) **Cable trays.**

(i) **Uses permitted.**

(A) Only the following may be installed in cable tray systems:

(I) Mineral–insulated metal–sheathed cable (Type MI);

(II) Armored cable (Type AC);

(III) Metal–clad cable (Type MC);

(IV) Power–limited tray cable (Type PLTC);

(V) Nonmetallic–sheathed cable (Type NM or NMC);

(VI) Shielded nonmetallic–sheathed cable (Type SNM);

(VII) Multiconductor service–entrance cable (Type SE or USE);

(VIII) Multiconductor underground feeder and branch–circuit cable (Type UF);

(IX) Power and control tray cable (Type TC);

(X) Other factory–assembled, multiconductor control, signal, or power cables which are specifically approved for installation in cable trays; or

(XI) Any approved conduit or raceway with its contained conductors.

(B) In industrial establishments only, where conditions of maintenance and supervision assure that only qualified persons will service the installed cable tray system, the following cables may also be installed in ladder, ventilated trough, or 4 inch ventilated channel–type cable trays:

(I) Single conductor cables which are 250 MCM or larger and are Types RHH, RHW, MV, USE, or THW, and other 250 MCM or larger single conductor cables if specifically approved for installation in cable trays. Where exposed to direct rays of the sun, cables shall be sunlight–resistant.

(II) Type MV cables, where exposed to direct rays of the sun, shall be sunlight–resistant.

(C) Cable trays in hazardous (classified) locations shall contain only the cable types permitted in such locations.

(ii) **Uses not permitted.** Cable tray systems may not be used in hoistways or where subjected to severe physical damage.

(d) **Open wiring on insulators.**

(i) **Uses permitted.** Open wiring on insulators is only permitted on systems of 600 volts, nominal, or less for industrial or agricultural establishments and for services.

(ii) **Conductor supports.** Conductors shall be rigidly supported on noncombustible, nonabsorbent insulating materials and may not contact any other objects.

(iii) **Flexible nonmetallic tubing.** In dry locations where not exposed to severe physical damage, conductors may be separately enclosed in flexible nonmetallic tubing. The tubing shall be in continuous lengths not exceeding 15 feet and secured to the surface by straps at intervals not exceeding 4 feet 6 inches.

(iv) **Through walls, floors, wood cross members, etc.** Open conductors shall be separated from contact with walls, floors, and wood cross members, or partitions through which they pass by tubes or bushings of noncombustible, nonabsorbent insulating material. If the bushing is shorter than the hole, a waterproof sleeve of nonconductive material shall be inserted in the hole and an insulating bushing slipped into the sleeve at each end in such a manner as to keep the conductors absolutely out of contact with the sleeve. Each conductor shall be carried through a separate tube or sleeve.

(v) **Protection from physical damage.** Conductors within 7 feet from the floor are considered exposed to physical damage. Where open conductors cross ceiling joints and wall studs and are exposed to physical damage, they shall be protected.

(2) **Cabinets, boxes, and fittings.**

(a) **Conductors entering boxes, cabinets, or fittings.** Conductors entering boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed. Unused openings in cabinets, boxes, and fittings shall also be effectively closed.

(b) **Covers and canopies.** All pull boxes, junction boxes, and fittings shall be provided with covers approved for the purpose. If metal covers are used they shall be grounded. In completed installations each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well–rounded surfaces on which the cords may bear.

(c) **Pull and junction boxes for systems over 600 volts, nominal.** In addition to other requirements in this section for pull and junction boxes, the following shall apply to these boxes for systems over 600 volts, nominal:

(i) Boxes shall provide a complete enclosure for the contained conductors or cables.

(ii) Boxes shall be closed by suitable covers securely fastened in place. Underground box covers that weight over 100 pounds meet this requirement. Covers for boxes shall be permanently marked "HIGH VOLTAGE." The marking shall be on the outside of the box cover and shall be readily visible and legible.

(3) **Switches.**

(a) **Knife switches.** Single–throw knife switches shall be so connected that the blades are dead when the switch is in the open position. Single–throw knife switches shall be so placed that gravity will not tend to close them. Single–throw knife switches approved for use in the inverted position shall be provided with a locking device that will ensure that the blades remain in the open position when so set. Double–throw knife switches may be mounted so that the throw will be either vertical or horizontal. However, if the throw is vertical a locking device shall be provided to ensure that the blades remain in the open position when so set.

(b) **Faceplates for flush-mounted snap switches.** Flush snap switches that are mounted in ungrounded metal boxes and located within reach of conducting floors or other conducting surfaces shall be provided with faceplates of nonconducting, noncombustible material.

(4) **Switchboards and panelboards.** Switchboards that have any exposed live parts shall be located in permanently dry locations and accessible only to qualified persons. Panelboards shall be mounted in cabinets, cutout boxes, or enclosures approved for the purpose and shall be dead front. However, panelboards other than the dead front externally-operable type are permitted where accessible only to qualified persons. Exposed blades of knife switches shall be dead when open.

(5) **Enclosures for damp or wet locations.**

(a) Cabinets, cutout boxes, fittings, boxes, and panelboard enclosures in damp or wet locations shall be installed so as to prevent moisture or water from entering and accumulating within the enclosures. In wet locations the enclosures shall be weatherproof.

(b) Switches, circuit breakers, and switchboards installed in wet locations shall be enclosed in weatherproof enclosures.

(6) **Conductors for general wiring.** All conductors used for general wiring shall be insulated unless otherwise permitted in this section. The conductor insulation shall be of a type that is approved for the voltage, operating temperature, and location of use. Insulated conductors shall be distinguishable by appropriate color or other suitable means as being grounded conductors, ungrounded conductors, or equipment grounding conductors.

(7) **Flexible cords and cables.**

(a) **Use of flexible cords and cables.**

(i) Flexible cords and cables shall be approved and suitable for conditions of use and location. Flexible cords and cables shall be used only for:

(A) Pendants;

(B) Wiring of fixtures;

(C) Connection of portable lamps or appliances;

(D) Elevator cables;

(E) Wiring of cranes and hoists;

(F) Connection of stationary equipment to facilitate their frequent interchange;

(G) Prevention of the transmission of noise or vibration;

(H) Appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair; or

(I) Data processing cables approved as a part of the date processing system.

(ii) If used as permitted in subitem (a)(i)(C), (a)(i)(F) or (a)(i)(H) of this subsection, the flexible cord shall be equipped with an attachment plug and shall be energized from an approved receptacle outlet.

(iii) Unless specifically permitted in item (a)(i) of this subsection, flexible cords and cables may not be used:

(A) As a substitute for the fixed wiring of a structure;

(B) Where run through holes in walls, ceilings, or floors;

(C) Where run through doorways, windows, or similar openings;

(D) Where attached to building surfaces; or

(E) Where concealed behind building walls, ceilings, or floors.

(iv) Flexible cords used in show windows and showcases shall be Type S, SO, SJ, SJO, ST, STO, SJT, SJTO, or AFS except for the wiring of chain-supported lighting fixtures and supply cords for portable lamps and other merchandise being displayed or exhibited.

(b) **Identification, splices, and terminations.**

(i) A conductor of a flexible cord or cable that is used as a grounded conductor or an equipment grounding conductor shall be distinguishable from other conductors. Types SJ, SJO, SJT, SJTO, S, SO, ST, and STO shall be durably marked on the surface with the type designation, size, and number of conductors.

(ii) Flexible cords shall be used only in continuous lengths without splice or tap. Hard service flexible cords No. 12 or larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

(iii) Flexible cords shall be connected to devices and fittings so that strain relief is provided which will prevent pull from being directly transmitted to joints or terminal screws.

(8) **Portable cables over 600 volts, nominal.** Multiconductor portable cable for use in supplying power to portable or mobile equipment at over 600 volts, nominal, shall consist of No. 8 or larger conductors employing flexible stranding. Cables operated at over 2,000 volts shall be shielded for the purpose of confining the voltage stresses to the insulation. Grounding conductors shall be provided. Connectors for these cables shall be of a locking type with provisions to prevent their opening or closing while energized. Strain relief shall be provided at connections and terminations. Portable cables may not be operated with splices unless the splices are of the permanent molded, vulcanized, or other approved type. Termination enclosures shall be suitably marked with a high voltage hazard warning, and terminations shall be accessible only to authorized and qualified personnel.

(9) **Fixture wires.**

(a) **General.** Fixture wires shall be approved for the voltage, temperature, and location of use. A fixture wire which is used as a grounded conductor shall be identified.

(b) **Uses permitted.** Fixture wires may be used:

(i) For installation in lighting fixtures and in similar equipment where enclosed or protected and not subject to bending or twisting in use; or

(ii) For connecting lighting fixtures to the branch-circuit conductors supplying the fixtures.

(c) **Uses not permitted.** Fixture wires may not be used as branch-circuit conductors except as permitted for Class 1 power limited circuits.

(10) **Equipment for general use.**

(a) **Lighting fixtures, lampholders, lamps, and receptacles.**

(i) Fixtures, lampholders, lamps, rosettes, and receptacles may have no live parts normally exposed to employee contact. However, rosettes and cleat-type lampholders and receptacles located at least 8 feet above the floor may have exposed parts.

(ii) Handlamps of the portable type supplied through flexible cords shall be equipped with a handle of molded composition or other material approved for the purpose, and a substantial guard shall be attached to the lampholder or the handle.

(iii) Lampholders of the screw-shell type shall be installed for use as lampholders only. Lampholders installed in wet or damp locations shall be of the weatherproof type.

(iv) Fixtures installed in wet or damp locations shall be approved for the purpose and shall be so constructed or installed that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.

(b) **Receptacles, cord connectors, and attachment plugs (caps).**

(i) Receptacles, cord connectors, and attachment plugs shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended. However, a 20-ampere T-slot receptacle or cord connector may accept a 15-ampere attachment plug of the same voltage rating.

(ii) A receptacle installed in a wet or damp location shall be suitable for the location.

(c) **Appliances.**

(i) Appliances, other than those in which the current-carrying parts at high temperatures are necessarily exposed, may have no live parts normally exposed to employee contact.

(ii) A means shall be provided to disconnect each appliance.

(iii) Each appliance shall be marked with its rating in volts and amperes or volts and watts.

(d) **Motors.** This paragraph applies to motors, motor circuits, and controllers.

(i) **In sight from.** If specified that one piece of equipment shall be "in sight from" another piece of equipment, one shall be visible and not more than 50 feet from the other.

(ii) **Disconnecting means.**

(A) A disconnecting means shall be located in sight from the controller location. However, a single disconnecting means may be located adjacent to a group of coordinated controllers mounted adjacent to each other or a multimotor continuous process machine. The controller disconnecting means for motor branch circuits over 600 volts, nominal, may be out of sight of the controller, if the controller is marked with a warning label giving the location and identification of the disconnecting means which is to be locked in the open position.

(B) The disconnecting means shall disconnect the motor and the controller from all ungrounded supply conductors and shall be so designed that no pole can be operated independently.

(C) If a motor and the driven machinery are not in sight from the controller location, the installation shall comply with one of the following conditions:

(I) The controller disconnecting means shall be capable of being locked in the open position.

(II) A manually operable switch that will disconnect the motor from its source of supply shall be placed in sight from the motor location.

(D) The disconnecting means shall plainly indicate whether it is in the open (off) or closed (on) position.

(E) The disconnecting means shall be readily accessible. If more than one disconnect is provided for the same equipment, only one need be readily accessible.

(F) An individual disconnecting means shall be provided for each motor, but a single disconnecting means may be used for a group of motors under any one of the following conditions:

(I) If a number of motors drive special parts of a single machine or piece of apparatus, such as a metal or woodworking machine, crane, or hoist;

(II) If a group of motors is under the protection of one set of branch-circuit protective devices; or

(III) If a group of motors is in a single room in sight from the location of the disconnecting means.

(iii) **Motor overload, short-circuit, and ground-fault protection.** Motors, motor-control apparatus, and motor branch-circuit conductors shall be protected against overheating due to motor overloads or failure to start, and against short-circuits or ground faults. These provisions shall not require overload protection that will stop a motor where a shutdown is likely to introduce additional or increased hazards, as in the case of fire pumps, or where continued operation of a motor is necessary for a safe shutdown of equipment or process and motor overload sensing devices are connected to a supervised alarm.

(iv) **Protection of live parts—all voltages.**

(A) Stationary motors having commutators, collectors, and brush rigging located inside of motor end brackets and not conductively connected to supply circuits operating at more than 150 volts to ground need not have such parts guarded. Exposed live parts of motors and controllers operating at 50 volts or more between terminals shall be guarded against accidental contact by any of the following:

(I) By installation in a room or enclosure that is accessible only to qualified persons;

(II) By installation on a suitable balcony, gallery, or platform, so elevated and arranged as to exclude unqualified persons; or

(III) By elevation 8 feet or more above the floor.

(B) Where live parts of motors or controllers operating at over 150 volts to ground are guarded against accidental contact only by location, and where adjustment or other attendance may be necessary during the operation of the apparatus, suitable insulating mats or platforms shall be provided so that the attendant cannot readily touch live parts unless standing on the mats or platforms.

(e) **Transformers.**

(i) The following paragraphs cover the installation of all transformers except the following:

(A) Current transformers;

(B) Dry-type transformers installed as a component part of other apparatus;

(C) Transformers which are an integral part of an x-ray, high frequency, or electrostatic-coating apparatus;

(D) Transformers used with Class 2 and Class 3 circuits, sign and outline lighting, electric discharge lighting, and power-limited fire-protective signalling circuits; and

(E) Liquid-filled or dry-type transformers used for research, development, or testing, where effective safeguard arrangements are provided.

(ii) The operating voltage of exposed live parts of transformer installations shall be indicated by warning signs or visible markings on the equipment or structure.

(iii) Dry-type, high fire point liquid-insulated, and askarel-insulated transformers installed indoors and rated over 35kV shall be in a vault.

(iv) If they present a fire hazard to employees, oil-insulated transformers installed indoors shall be in a vault.

(v) Combustible material, combustible buildings and parts of buildings, fire escapes, and door and window openings shall be safeguarded from fires which may originate in oil-insulated transformers attached to or adjacent to a building or combustible material.

(vi) Transformer vaults shall be constructed so as to contain fire and combustible liquids within the vault and to prevent unauthorized access. Locks and latches shall be so arranged that a vault door can be readily opened from the inside.

(vii) Any pipe or duct system foreign to the vault installation may not enter or pass through a transformer vault.

(viii) Materials may not be stored in transformer vaults.

(f) **Capacitors.**

(i) All capacitors, except surge capacitors or capacitors included as a component part of other apparatus, shall be provided with an automatic means of draining the stored charge after the capacitor is disconnected from its source of supply.

(ii) Capacitors rated over 600 volts, nominal, shall comply with the following additional requirements:

(A) Isolating or disconnecting switches (with no interrupting rating) shall be interlocked with the load interrupting device or shall be provided with prominently displayed caution signs to prevent switching load current.

(B) For series capacitors (see WAC 296-24-95603 (2)(c)), the proper switching shall be assured by use of at least one of the following:

(I) Mechanically sequenced isolating and bypass switches;

(II) Interlocks; or

(III) Switching procedure prominently displayed at the switching location.

(g) **Storage batteries.** Provisions shall be made for sufficient diffusion and ventilation of gases from storage batteries to prevent the accumulation of explosive mixtures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95609, filed 3/30/82.]

WAC 296-24-95611 Specific purpose equipment and installations. (1) Electric signs and outline lighting.

(a) **Disconnecting means.** Signs operated by electronic or electromechanical controllers located outside the sign shall have a disconnecting means located inside the controller enclosure or within sight of the controller location, and it shall be capable of being locked in the open position. Such disconnecting means shall have no pole that can be operated independently, and it shall open all ungrounded conductors that supply the controller and sign. All other signs, except the portable type, and all outline lighting installations shall have an externally operable disconnecting means which can open all ungrounded conductors and is within the sight of the sign or outline lighting it controls.

(b) Doors or covers giving access to uninsulated parts of indoor signs or outline lighting exceeding 600 volts and accessible to other than qualified persons shall either be provided with interlock switches to disconnect the primary circuit or shall be so fastened that the use of other than ordinary tools will be necessary to open them.

(2) **Cranes and hoists.** This subsection applies to the installation of electric equipment and wiring used in connection with cranes, monorail hoists, hoists, and all runways.

(a) **Disconnecting means.**

(i) A readily accessible disconnecting means shall be provided between the runway contact conductors and the power supply.

(ii) Another disconnecting means, capable of being locked in the open position, shall be provided in the leads from the runway contact conductors or other power supply on any crane or monorail hoist.

(A) If this additional disconnection means is not readily accessible from the crane or monorail hoist operating station, to open the power circuit to all motors of the crane or monorail hoist.

(B) The additional disconnect may be omitted if a monorail hoist or hand-propelled crane bridge installation meets all of the following:

(I) The unit is floor controlled;

(II) The unit is within view of the power supply disconnecting means; and

(III) No fixed work platform has been provided for servicing the unit.

(b) **Control.** A limit switch or other device shall be provided to prevent the load block from passing the safe upper limit of travel of any hoisting mechanism.

(c) **Clearance.** The dimension of the working space in the direction of access to live parts which may require examination, adjustment, servicing, or maintenance while alive shall be a minimum of 2 feet 6 inches. Where controls are enclosed in cabinets, the door(s) shall either open at least 90 degrees or be removable.

(3) **Elevators, dumbwaiters, escalators, and moving walks.**

(a) **Disconnecting means.** Elevators, dumbwaiters, escalators, and moving walks shall have a single means for disconnecting all ungrounded main power supply conductors for each unit.

(b) **Warning signs.** If interconnections between control panels are necessary for operation of the system on a multicar installation that remains energized from a source other than the disconnecting means, a warning sign shall be mounted on or adjacent to the disconnecting means. The sign shall be clearly legible and shall read "Warning—Parts of the control panel are not de-energized by this switch." (See WAC 296-24-95603 (2)(c).)

(c) **Control panels.** If control panels are not located in the same space as the drive machine, they shall be located in cabinets with doors or panels capable of being locked closed.

(4) **Electric welders--disconnecting means.**

(a) A disconnecting means shall be provided in the supply circuit for each motor-generator arc welder, and for each AC transformer and DC rectifier arc welder which is not equipped with a disconnect mounted as an integral part of the welder.

(b) A switch or circuit breaker shall be provided by which each resistance welder and its control equipment can be isolated from the supply circuit. The ampere rating of this disconnecting means may not be less than the supply conductor ampacity.

(5) **Data processing systems--disconnecting means.** A disconnecting means shall be provided to disconnect the power to all electronic equipment in data processing or computer rooms. This disconnecting means shall be controlled from locations readily accessible to the operator at the principal exit doors. There shall also be a similar disconnecting means to disconnect the air conditioning system serving this area.

(6) **X-ray equipment.** This subsection applies to x-ray equipment for other than medical or dental use.

(a) **Disconnecting means.**

(i) A disconnecting means shall be provided in the supply circuit. The disconnecting means shall be operable from a location readily accessible from the x-ray control. For equipment connected to a 120-volt branch circuit of 30 amperes or less, a grounding-type attachment plug cap and receptacle of proper rating may serve as a disconnecting means.

(ii) If more than one piece of equipment is operated from the same high-voltage circuit, each piece or each group of equipment as a unit shall be provided with a high-voltage switch or equivalent disconnecting means. This disconnecting means shall be constructed, enclosed, or located so as to avoid contact by employees with its live parts.

(b) **Control.**

(i) **Radiographic and fluoroscopic types.** Radiographic and fluoroscopic-type equipment shall be effectively enclosed or shall have interlocks that de-energize the equipment automatically to prevent ready access to live current-carrying parts.

(ii) **Diffraction and irradiation types.** Diffraction-type and irradiation-type equipment shall be provided with a means to indicate when it is energized unless the equipment or installation is effectively enclosed or is provided with interlocks to prevent access to live current-carrying parts during operation.

(7) **Induction and dielectric heating equipment.**

(a) **Scope.** Subdivisions (b) and (c) of this subsection cover induction and dielectric heating equipment and accessories for industrial and scientific applications, but not for medical dental applications or for appliances.

(b) **Guarding and grounding.**

(i) **Enclosures.** The converting apparatus (including the DC line) and high-frequency electric circuits (excluding the output circuits and remote-control circuits) shall be completely contained within enclosures of noncombustible material.

(ii) **Panel controls.** All panel controls shall be of dead-front construction.

(iii) **Access to internal equipment.** Where doors are used for access to voltages from 500 to 1000 volts AC or DC, either door locks or interlocks shall be provided. Where doors are used for access to voltages of over 1000 volts AC or DC, either mechanical lockouts with a disconnecting means to prevent access until voltage is removed from the cubicle, or both door interlocking and mechanical door locks, shall be provided.

(iv) **Warning labels.** "Danger" labels shall be attached on the equipment and shall be plainly visible even when doors are open or panels are removed from compartments containing voltages of over 250 volts AC or DC.

(v) **Work applicator shielding.** Protective cages or adequate shielding shall be used to guard work applicators other than induction heating coils. Induction heating coils shall be protected by insulation and/or refractory materials. Interlock switches shall be used on all hinged access doors, sliding panels, or other such means of access to the applicator. Interlock switches shall be connected in such a manner as to remove all power from the applicator when any one of the access doors or panels is open. Interlocks on access doors or panels are not required if the applicator is an induction heating coil at DC ground potential or operating at less than 150 volts AC.

(vi) **Disconnecting means.** A readily accessible disconnecting means shall be provided by which each unit of heating equipment can be isolated from its supply circuit.

(c) **Remote control.** If remote controls are used for applying power, a selector switch shall be provided and interlocked to provide power from only one control point at a time. Switches operated by foot pressure shall be provided with a shield over the contact button to avoid accidental closing the switch.

(8) **Electrolytic cells.**

(a) **Scope.** These provisions for electrolytic cells apply to the installation of the electrical components and accessory equipment of electrolytic cells, electrolytic cell lines, and process power supply for the production of aluminum, cadmium, chlorine, copper, fluorine, hydrogen peroxide, magnesium, sodium, sodium chlorate, and zinc. Cells used as a source of electric energy and for

electroplating processes and cells used for production of hydrogen are not covered by these provisions.

(b) **Definitions applicable to this subsection.**

Cell line: An assembly of electrically interconnected electrolytic cells supplied by a source of direct-current power.

Cell line attachments and auxiliary equipment: Cell line attachments and auxiliary equipment include, but are not limited to: Auxiliary tanks; process piping; duct work; structural supports; exposed cell line conductors; conduits and other raceways; pumps; positioning equipment and cell cutout or bypass electrical devices. Auxiliary equipment also includes tools, welding machines, crucibles, and other portable equipment used for operation and maintenance within the electrolytic cell line working zone. In the cell line working zone, auxiliary equipment includes the exposed conductive surfaces of ungrounded cranes and crane-mounted cell-servicing equipment.

Cell line working zone: The cell line working zone is the space envelope wherein operation or maintenance is normally performed on or in the vicinity of exposed energized surfaces of cell lines or their attachments.

Electrolytic cells: A receptacle or vessel in which electrochemical reactions are caused by applying energy for the purpose of refining or producing usable materials.

(c) **Application.** Installations covered by subsection (8) of this section shall comply with all applicable provisions of this section except as follows:

(i) Overcurrent protection of electrolytic cell DC process power circuits need not comply with the requirements of WAC 296-24-95607(5).

(ii) Equipment located or used within the cell line working zone or associated with the cell line DC power circuits need not comply with the provisions of WAC 296-24-95607(6).

(iii) Electrolytic cells, cell line conductors, cell line attachments, and the wiring of auxiliary equipment and devices within the cell line working zone need not comply with the provisions of WAC 296-24-95605 and 296-24-95607 (2) and (3).

(d) **Disconnecting means.**

(i) If more than one DC cell line process power supply serves the same cell line, a disconnecting means shall be provided on the cell line circuit side of each power supply to disconnect it from the cell line circuit.

(ii) Removable links or removable conductors may be used as the disconnecting means.

(e) **Portable electric equipment.**

(i) The frames and enclosures of portable electric equipment used within the cell line working zone may not be grounded. However, these frames and enclosures may be grounded if the cell line circuit voltage does not exceed 200 volts DC or if the frames are guarded.

(ii) Ungrounded portable electric equipment shall be distinctively marked and may not be interchangeable with grounded portable electric equipment.

(f) **Power supply circuits and receptacles for portable electric equipment.**

(i) Circuits supplying power to ungrounded receptacles for hand-held, cord-and plug-connected equipment shall be electrically isolated from any distribution system supplying areas other than the cell line working zone and shall be ungrounded. Power for these circuits shall be supplied through isolating transformers.

(ii) Receptacles and their mating plugs for ungrounded equipment may not have provision for a grounding conductor and shall be of a configuration which prevents their use for equipment required to be grounded.

(iii) Receptacles on circuits supplied by an isolating transformer with an ungrounded secondary shall have a distinctive configuration, shall be distinctively marked, and may not be used in any other location in the plant.

(g) **Fixed and portable electric equipment.**

(i) AC systems supplying fixed and portable electric equipment within the cell line working zone need not be grounded.

(ii) Exposed conductive surfaces, such as electric equipment housings, cabinets, boxes, motors, raceways and the like that are within the cell line working zone need not be grounded.

(iii) Auxiliary electrical devices, such as motors, transducers, sensors, control devices, and alarms, mounted on an electrolytic cell or other energized surface, shall be connected by any of the following means:

(A) Multiconductor hard usage or extra hard usage flexible cord;

(B) Wire or cable in suitable raceways; or

(C) Exposed metal conduit, cable tray, armored cable, or similar metallic systems installed with insulating breaks such that they will not cause a potentially hazardous electrical condition.

(iv) Fixed electric equipment may be bonded to the energized conductive surfaces of the cell line, its attachments, or auxiliaries. If fixed electric equipment is mounted on an energized conductive surface, it shall be bonded to that surface.

(h) **Auxiliary nonelectric connections.** Auxiliary nonelectric connections, such as air hoses, water hoses, and the like, to an electrolytic cell, its attachments, or auxiliary equipment may not have continuous conductive reinforcing wire, armor, braids, and the like. Hoses shall be of a nonconductive material.

(i) **Cranes and hoists.**

(i) The conductive surfaces of cranes and hoists that enter the cell line working zone need not be grounded. The portion of an overhead crane or hoist which contacts an energized electrolytic cell or energized attachments shall be insulated from ground.

(ii) Remote crane or hoist controls which may introduce hazardous electrical conditions into the cell line working zone shall employ one or more of the following systems:

(A) Insulated and ungrounded control circuit;

(B) Nonconductive rope operator;

(C) Pendent pushbutton with nonconductive supporting means and having nonconductive surfaces or ungrounded exposed conductive surfaces; or

(D) Radio.

(9) **Electrically driven or controlled irrigation machines.** (See WAC 296-24-95603 (2)(c).)

(a) **Lightning protection.** If an electrically driven or controlled irrigation machines has a stationary point, a driven ground rod shall be connected to the machine at the stationary point for lightning protection.

(b) **Disconnecting means.** The main disconnecting means for a center pivot irrigation machine shall be located at the point of connection of electrical power to the machine and shall be readily accessible and capable of being locked in the open position. A disconnecting means shall be provided for each motor and controller.

(10) **Swimming pools, fountains, and similar installations.**

(a) **Scope.** Subdivisions (b) through (e) of this subsection apply to electric wiring for and equipment in or adjacent to all swimming, wading, therapeutic, and decorative pools and fountains, whether permanently installed or storable, and to metallic auxiliary equipment, such as pumps, filters, and similar equipment. Therapeutic pools in health care facilities are exempt from these provisions.

(b) **Lighting and receptacles.**

(i) **Receptacles.** A single receptacle of the locking and grounding type that provides power for a permanently installed swimming pool recirculating pump motor may be located not less than 5 feet from the inside walls of a pool. All other receptacles on the property shall be located at least 10 feet from the inside walls of a pool. Receptacles which are located within 15 feet of the inside walls of the pool shall be protected by ground-fault circuit interrupters.

Note: In determining these dimensions, the distance to be measured is the shortest path the supply cord of an appliance connected to the receptacle would follow without piercing a floor, wall, or ceiling of a building or other effective permanent barrier.

(ii) **Lighting fixtures and lighting outlets.**

(A) Unless they are 12 feet above the maximum water level, lighting fixtures and lighting outlets may not be installed over a pool or over the area extending 5 feet horizontally from the inside walls of a pool. However, a lighting fixture or lighting outlet which has been installed before (eff. date), may be located less than 5 feet measured horizontally from the inside walls of a pool if it is at least 5 feet above the surface of the maximum water level and shall be rigidly attached to the existing structure. It shall also be protected by a ground-fault circuit interrupter installed in the branch circuit supplying the fixture.

(B) Unless installed 5 feet above the maximum water level and rigidly attached to the structure adjacent to or enclosing the pool, lighting fixtures and lighting outlets installed in the area extending between 5 feet and 10 feet horizontally from the inside walls of a pool shall be protected by a ground-fault circuit interrupter.

(c) **Cord-connected and plug-connected equipment.** Flexible cords used with the following equipment may not exceed 3 feet in length and shall have a copper equipment grounding conductor with a grounding-type attachment plug.

(i) Cord-connected and plug-connected lighting fixtures installed within 16 feet of the water surface of permanently installed pools.

(ii) Other cord-connected and plug-connected, fixed or stationary equipment used with permanently installed pools.

(d) **Underwater equipment.**

(i) A ground-fault circuit interrupter shall be installed in the branch circuit supplying underwater fixtures operating at more than 15 volts. Equipment installed underwater shall be approved for the purpose.

(ii) No underwater lighting fixtures may be installed for operation at over 150 volts between conductors.

(e) **Fountains.** All electric equipment operating at more than 15 volts, including power supply cords, used with fountains shall be protected by ground-fault circuit interrupters. (See WAC 296-24-95603 (2)(c).)

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95611, filed 3/30/82.]

WAC 296-24-95613 Hazardous (classified) locations. (1) **Scope.** This section covers the requirements for electric equipment and wiring in locations which are classified depending on the properties of the flammable vapors, liquids or gases, or combustible dusts or fibers which may be present therein and the likelihood that a flammable combustible concentration or quantity is present. Hazardous (classified) locations may be found in occupancies such as, but not limited to, the following: Aircraft hangars, gasoline dispensing and service stations, bulk storage plants for gasoline or other volatile flammable liquids, paint-finishing process plants, health care facilities, agricultural or other facilities where excessive combustible dusts may be present, marinas, boat yards, and petroleum and chemical processing plants. Each room, section or area shall be considered individually in determining its classification. These hazardous (classified) locations are assigned six designations as follows:

Class I,	Division 1
Class I,	Division 2
Class II,	Division 1
Class II,	Division 2
Class III,	Division 1
Class III,	Division 2

For definitions of these locations see WAC 296-24-95601(1). All applicable requirements in this subpart shall apply to hazardous (classified) locations, unless modified by provisions of this section.

(2) **Electrical installations.** Equipment, wiring methods, and installations of equipment in hazardous (classified) locations shall be intrinsically safe, or approved for the hazardous (classified) location, or safe for the hazardous (classified) location. Requirements for each of these options are as follows:

(a) **Intrinsically safe.** Equipment and associated wiring approved as intrinsically safe shall be permitted in any hazardous (classified) location for which it is approved.

(b) **Approved for the hazardous (classified) location.**

(i) Equipment shall be approved not only for the class of location but also for the ignitible or combustible properties of the specific gas, vapor, dust, or fiber that will be present.

Note: NFPA 70, the National Electrical Code, lists or defines hazardous gases, vapors, and dusts by "groups" characterized by their ignitible or combustible properties.

(ii) Equipment shall be marked to show the class, group, and operating temperature or temperature range, based on operation in a 40 degrees C ambient, for which it is approved. The temperature marking may not exceed the ignition temperature of the specific gas or vapor to be encountered. However, the following provisions modify this marking requirement for specific equipment:

(A) Equipment of the nonheat–producing type, such as junction boxes, conduit, and fittings, and equipment of the heat–producing type having a maximum temperature not more than 100 degrees C (212 degrees F) need not have a marked operating temperature or temperature range.

(B) Fixed lighting fixtures marked for use in Class I, Division 2 locations only, need not be marked to indicate the group.

(C) Fixed general–purpose equipment in Class I locations, other than lighting fixtures, which is acceptable for use in Class I, Division 2 locations need not be marked with the class, group, division, or operating temperature.

(D) Fixed dust–tight equipment, other than lighting fixtures, which is acceptable for use in Class II, Division 2 and Class III locations need not be marked with the class, group, division, or operating temperature.

(c) **Safe for the hazardous (classified) location.** Equipment which is safe for the location shall be of a type and design which the employer demonstrates will provide protection from the hazards arising from the combustibility and flammability of vapors, liquids, gases, dusts, or fibers.

Note: The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installations which will meet this requirement. The guidelines of this document address electric wiring, equipment, and systems installed in hazardous (classified) locations and contain specific provisions for the following: Wiring methods, wiring connections; conductor insulation, flexible cords, sealing and drainage, transformers, capacitors, switches, circuit breakers, fuses, motor controllers, receptacles, attachment plugs, meters, relays, instruments, resistors, generators, motors, lighting fixtures, storage battery charging equipment, electric cranes, electric hoists and similar equipment, utilization equipment, signaling systems, alarm systems, remote control systems, local loud speaker and communication systems, ventilation piping, live parts, lighting surge protection, and grounding. Compliance with these guidelines will constitute one means, but not the only means, of compliance with this subsection.

(3) **Conduits.** All conduits shall be threaded and shall be made wrench–tight. Where it is impractical to make a threaded joint tight, a bonding jumper shall be utilized.

(4) **Equipment in Division 2 locations.** Equipment that has been approved for a Division 1 location may be installed in a Division 2 location of the same class and group. General–purpose equipment or equipment in general–purpose enclosures may be installed in Division 2 locations if the equipment does not constitute a source of ignition under normal operating conditions.

(5) Motors and generators.

(a) Motors and generators shall conform to the following: Class I, Division 1. In Class I, Division 1 locations, motors, generators and other rotating electric machinery shall be: (i) Approved for Class I, Division 1 locations (explosion–proof); or (ii) of the totally enclosed type supplied with positive–pressure ventilation from a source of clean air with discharge to a safe area, so arranged to prevent energizing of the machine until ventilation has been established and the enclosure has been purged with at least 10 volumes of air, and also arranged to automatically deenergize the equipment when the air supply fails; or (iii) of the totally enclosed inert–gas–filled type supplied with a suitable reliable source of inert gas for pressuring the enclosure, with devices provided to ensure a positive pressure in the enclosure and arranged to automatically deenergize the equipment when the gas supply fails; or (iv) of a type designed to be submerged in a liquid which is flammable only when vaporized and mixed with air, or in a gas or vapor at a pressure greater than atmospheric and which is flammable only when mixed with air; and the machine is so arranged to prevent energizing it until it has been purged with the liquid or gas to exclude air, and also arranged to automatically deenergize the equipment when the supply of liquid, or gas or vapor fails or the pressure is reduced to atmospheric. Totally enclosed motors of types (ii) and (iii) shall have no external surface with an operating temperature in degrees Celsius in excess of eighty percent of the ignition temperature of the gas or vapor involved, as determined by ASTM test procedure (Designation: D–2155–69). Appropriate devices shall be provided to detect any increase in temperature of the motor beyond design limits and automatically deenergize the equipment or provide an adequate alarm. Auxiliary equipment shall be of a type approved for the location in which it is installed.

(b) An installation or equipment is acceptable to the director of labor and industries, and approved within the meaning of WAC 296–24–95601(1) under the following conditions as stated in WAC 296–24–950 (4)(b):

(i) If it is accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory, such as, but not limited to, Underwriters' Laboratories, Inc., and Factory Mutual Engineering Corporation; or

(ii) With respect to an installation or equipment of a kind which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe, if it is inspected or tested by another federal agency, or by a state, municipal, or local authority responsible for enforcing occupational safety provisions of the National Electrical Code, and found in compliance with the provisions of the National Electrical Code as applied in WAC 296–24–956; or

(iii) With respect to custom–made equipment or related installations which are designed, fabricated for,

and intended for use by, a particular customer, if it is determined to be safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the director and his authorized representatives.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95613, filed 3/30/82.]

WAC 296-24-95615 Special systems. (1) **Systems over 600 volts, nominal.** Subdivisions (a) through (d) of this subsection cover the general requirements for all circuits and equipment operated at over 600 volts.

(a) **Wiring methods for fixed installations.**

(i) Above-ground conductors shall be installed in rigid metal conduit, in intermediate metal conduit, in cable trays, in cablebus, in other suitable raceways, or as open runs of metal-clad cable suitable for the use and purpose. However, open runs of nonmetallic-sheathed cable or of bare conductors or busbars may be installed in locations accessible only to qualified persons. Metallic shielding components, such as tapes, wires, or braids for conductors, shall be grounded. Open runs of insulated wires and cables having a bare lead sheath or a braided outer covering shall be supported in a manner designed to prevent physical damage to the braid or sheath.

(ii) Conductors emerging from the ground shall be enclosed in approved raceways. (See WAC 296-24-95603 (2)(c).)

(b) **Interrupting and isolating devices.**

(i) Circuit breaker installations located indoors shall consist of metal-enclosed units or fire-resistant cell-mounted units. In locations accessible only to qualified personnel, open mounting of circuit breakers is permitted. A means of indicating the open and closed position of circuit breakers shall be provided.

(ii) Fused cutouts installed in buildings or transformer vaults shall be of a type approved for the purpose. They shall be readily accessible for fuse replacement.

(iii) A means shall be provided to completely isolate equipment for inspection and repairs. Isolating means which are not designed to interrupt the load current of the circuit shall be either interlocked with an approved circuit interrupter or provided with a sign warning against opening them under load.

(c) **Mobile and portable equipment.**

(i) **Power cable connections to mobile machines.** A metallic enclosure shall be provided on the mobile machine for enclosing the terminals of the power cable. The enclosure shall include provisions for a solid connection for the ground wire(s) terminal to effectively ground the machine frame. The method of cable termination used shall prevent any strain or pull on the cable from stressing the electrical connections. The enclosure shall have provision for locking so only authorized qualified persons may open it and shall be marked with a sign warning of the presence of energized parts.

(ii) **Guarding live parts.** All energized switching and control parts shall be enclosed in effectively grounded metal cabinets or enclosures. Circuit breakers and protective equipment shall have the operating means projecting through the metal cabinet or enclosure so these units can be reset without locked doors being opened. Enclosures and metal cabinets shall be locked so that only authorized qualified persons have access and shall be marked with a sign warning of the presence of energized parts. Collector ring assemblies on revolving-type machines (shovels, draglines, etc.) shall be guarded.

(d) **Tunnel installations.**

(i) **Application.** The provisions of this subsection apply to installation and use of high-voltage power distribution and utilization equipment which is portable and/or mobile, such as substations, trailers, cars, mobile shovels, draglines, hoists, drills, dredges, compressors, pumps, conveyors, and underground excavators.

(ii) **Conductors.** Conductors in tunnels shall be installed in one or more of the following:

(A) Metal conduit or other metal raceway,

(B) Type MC cable, or

(C) Other approved multiconductor cable.

Conductors shall also be so located or guarded as to protect them from physical damage. Multiconductor portable cable may supply mobile equipment. An equipment grounding conductor shall be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. The equipment grounding conductor may be insulated or bare.

(iii) **Guarding live parts.** Bare terminals of transformers, switches, motor controllers, and other equipment shall be enclosed to prevent accidental contact with energized parts. Enclosures for use in tunnels shall be drip-proof, weatherproof, or submersible as required by the environmental conditions.

(iv) **Disconnecting means.** A disconnecting means that simultaneously opens all ungrounded conductors shall be installed at each transformer or motor location.

(v) **Grounding and bonding.** All nonenergized metal parts of electric equipment and metal raceways and cable sheaths shall be effectively grounded and bonded to all metal pipes and rails at the portal and at intervals not exceeding 1000 feet throughout the tunnel.

(2) **Emergency power systems.**

(a) **Scope.** The provisions for emergency systems apply to circuits, systems, and equipment intended to supply power for illumination and special loads, in the event of failure of the normal supply.

(b) **Wiring methods.** Emergency circuit wiring shall be kept entirely independent of all other wiring and equipment and may not enter the same raceway, cable, box, or cabinet as other wiring except either where common circuit elements suitable for the purpose are required, or for transferring power from the normal to the emergency source.

(c) **Emergency illumination.** Where emergency lighting is necessary, the system shall be so arranged that the failure of any individual lighting element, such as the burning out of a light bulb, cannot leave any space in total darkness.

(3) **Class 1, Class 2, and Class 3 remote control, signaling, and power-limited circuits.**

(a) **Classification.** Class 1, Class 2, or Class 3 remote control, signaling, or power-limited circuits are characterized by their usage and electrical power limitation

which differentiates them from light and power circuits. These circuits are classified in accordance with their respective voltage and power limitations as summarized in items (a)(i) through (a)(iii) of this subsection.

(i) **Class 1 circuits.**

(A) A Class 1 power-limited circuit is supplied from a source having a rated output of not more than 30 volts and 1000 volt-amperes.

(B) A Class 1 remote control circuit or a Class 1 signaling circuit has a voltage which does not exceed 600 volts; however, the power output of the source need not be limited.

(ii) **Class 2 and Class 3 circuits.**

(A) Power for Class 2 and Class 3 circuits is limited either inherently (in which no overcurrent protection is required) or by a combination of a power source and overcurrent protection.

(B) The maximum circuit voltage is 150 volts AC or DC for a Class 2 inherently limited power source, and 100 volts AC or DC for a Class 3 inherently limited power source.

(C) The maximum circuit voltage is 30 volts AC and 60 volts DC for a Class 2 power source limited by overcurrent protection, and 150 volts AC or DC for a Class 3 power source limited by overcurrent protection.

(iii) The maximum circuit voltages in items (a)(i) and (a)(ii) of this subsection apply to sinusoidal AC or continuous DC power sources, and where wet contact occurrence is not likely.

(b) **Marking.** A Class 2 or Class 3 power supply unit shall be durably marked where plainly visible to indicate the class of supply and its electrical rating. (See WAC 296-24-95603 (2)(c).)

(4) **Fire protective signaling systems.** (See WAC 296-24-95603 (2)(c).)

(a) **Classifications.** Fire protective signaling circuits shall be classified either as nonpower limited or power limited.

(b) **Power sources.** The power sources for use with fire protective signaling circuits shall be either power limited or nonlimited as follows:

(i) The power supply of nonpower-limited fire protective signaling circuits shall have an output voltage not in excess of 600 volts.

(ii) The power for power-limited fire protective signaling circuits shall be either inherently limited, in which no overcurrent protection is required, or limited by a combination of power source and overcurrent protection.

(c) **Nonpower-limited conductor location.** Nonpower-limited fire protective signaling circuits and Class 1 circuits may occupy the same enclosure, cable, or raceway provided all conductors are insulated for maximum voltage of any conductor within the enclosure, cable or raceway. Power supply and fire protective signaling circuit conductors are permitted in the same enclosure, cable, or raceway only if connected to the same equipment.

(d) **Power-limited conductor location.** Where open conductors are installed, power-limited fire protective signaling circuits shall be separated at least 2 inches from conductors of any light, power, Class 1, and nonpower-limited fire protective signaling circuits unless a special and equally protective method of conductor separation is employed. Cables and conductors of two or more power-limited fire protective signaling circuits or Class 3 circuits are permitted in the same cable, enclosure, or raceway. Conductors of one or more Class 2 circuits are permitted within the same cable, enclosure, or raceway with conductors of power-limited fire protective signaling circuits provided that the insulation of Class 2 circuit conductors in the cable, enclosure, or raceway is at least that needed for the power-limited fire protective signaling circuits.

(e) **Identification.** Fire protective signaling circuits shall be identified at terminal and junction locations in a manner which will prevent unintentional interference with the signaling circuit during testing and servicing. Power-limited fire protective signaling circuits shall be durably marked as such where plainly visible at terminations.

(5) **Communications systems.**

(a) **Scope.** These provisions for communication systems apply to such systems as central-station-connected and noncentral-station-connected telephone circuits, radio and television receiving and transmitting equipment, including community antenna television and radio distribution systems, telegraph, district messenger, and outside wiring for fire and burglar alarm, and similar central station systems. These installations need not comply with the provisions of WAC 296-24-95605 through 296-24-95615(4) except 296-24-95607 (3)(a) and 296-24-95613(2).

(b) **Protective devices.**

(i) Communication circuits so located as to be exposed to accidental contact with light or power conductors operating at over 300 volts shall have each circuit so exposed provided with a protector approved for the purpose.

(ii) Each conductor of a lead-in from an outdoor antenna shall be provided with an antenna discharge unit or other suitable means that will drain static charges from the antenna system.

(c) **Conductor location.**

(i) **Outside of buildings.**

(A) Receiving distribution lead-in or aerial-drop cables attached to buildings and lead-in conductors to radio transmitters shall be so installed as to avoid the possibility of accidental contact with electric light or power conductors.

(B) The clearance between lead-in conductors and any lightning protection conductors may not be less than 6 feet.

(ii) **On poles.** Where practicable, communication conductors on poles shall be located below the light or power conductors. Communications conductors may not be attached to a crossarm that carries light or power conductors.

(iii) **Inside of buildings.** Indoor antennas, lead-ins, and other communication conductors attached as open conductors to the inside of buildings shall be located at least 2 inches from conductors of any light or power or Class 1 circuits unless a special and equally protective method

of conductor separation, approved for the purpose, is employed.

(d) **Equipment location.** Outdoor metal structures supporting antennas, as well as self-supporting antennas such as vertical rods or dipole structures, shall be located as far away from overhead conductors of electric light and power circuits of over 150 volts to ground as necessary to avoid the possibility of the antenna or structure falling into or making accidental contact with such circuits.

(e) **Grounding.**

(i) **Lead-in conductors.** If exposed to contact with electric light and power conductors, the metal sheath of aerial cables entering buildings shall be grounded or shall be interrupted close to the entrance to the building by an insulating joint or equivalent device. Where protective devices are used, they shall be grounded in an approved manner.

(ii) **Antenna structures.** Masts and metal structures supporting antennas shall be permanently and effectively grounded without splice or connection in the grounding conductor.

(iii) **Equipment enclosures.** Transmitters shall be enclosed in a metal frame or grill or separated from the operating space by a barrier, all metallic parts of which are effectively connected to ground. All external metal handles and controls accessible to the operating personnel shall be effectively grounded. Unpowered equipment and enclosures shall be considered grounded where connected to an attached coaxial cable with an effectively grounded metallic shield.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95615, filed 3/30/82.]

WAC 296-24-95617 Effective date. WAC 296-24-956 through 296-24-95617 shall become effective sixty days after filing with the code reviser.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-08-026 (Order 82-10), § 296-24-95617, filed 3/30/82.]

WAC 296-24-95699 Appendices. Appendix A - Reference documents. The following references provide information which can be helpful in understanding and complying with the requirements contained in WAC 296-24-956 through 296-24-95615.

ANSI A17.1-71 Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks.
ANSI B9.1-71 Safety Code for Mechanical Refrigeration.
ANSI B30.2-76 Safety Code for Overhead and Gantry Cranes.
ANSI B30.3-75 Hammerhead Tower Cranes.
ANSI B30.4-73 Safety Code for Portal, Tower, and Pillar Cranes.
ANSI B30.5-68 Safety Code for Crawler, Locomotive, and Truck Cranes.
ANSI B30.6-77 Derricks.
ANSI B30.7-77 Base Mounted Drum Hoists.
ANSI B30.8-71 Safety Code for Floating Cranes and Floating Derricks.
ANSI B30.11-73 Monorail Systems and Underhung Cranes.
ANSI B30.12-75 Handling Loads Suspended from Rotorcraft.
ANSI B30.13-77 Controlled Mechanical Storage Cranes.
ANSI B30.15-73 Safety Code for Mobile Hydraulic Cranes.
ANSI B30.16-73 Overhead Hoists.
ANSI C2-81 National Electrical Safety Code.
ANSI C33.27-74 Safety Standard for Outlet Boxes and Fittings for Use in Hazardous Locations, Class I, Groups A, B, C, and D, and Class II, Groups E, F, and G.
ANSI K61.1-72 Safety Requirements for the Storage and Handling of Anhydrous Ammonia.
ASTM D2155-66 Test Method for Autoignition Temperature of Liquid Petroleum Products.
ASTM D3176-74 Method for Ultimate Analysis of Coal and Coke.
ASTM D3180-74 Method for Calculating Coal and Coke Analyses from as Determined to Different Bases.
IEEE 463-77 Standard for Electrical Safety Practices in Electrolytic Cell Line Working Zones.
NFPA 20-76 Standard for the Installation of Centrifugal Fire Pumps.
NFPA 30-78 Flammable and Combustible Liquids Code.
NFPA 32-74 Standard for Drycleaning Plants.
NFPA 33-73 Standard for Spray Application Using Flammable and Combustible Materials.
NFPA 34-74 Standard for Dip Tanks Containing Flammable or Combustible Liquids.
NFPA 35-76 Standard for the Manufacture of Organic Coatings.
NFPA 36-74 Standard for Solvent Extraction Plants.
NFPA 40-74 Standard for the Storage and Handling of Cellulose Nitrate Motion Picture Film.
NFPA 56A-73 Standard for the Use of Inhalation Anesthetics (Flammable and Nonflammable).
NFPA 56F-74 Standard for Nonflammable Medical Gas Systems.
NFPA 58-76 Standard for the Storage and Handling of Liquefied Petroleum Gases.
NFPA 59-76 Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants.
NFPA 70-78 National Electrical Code.
NFPA 70C-74 Hazardous Locations Classification.
NFPA 70E Standard for the Electrical Safety Requirements for Employee Workplaces.
NFPA 71-77 Standard for the Installation, Maintenance, and Use of Central Station Signaling Systems.
NFPA 72A-75 Standard for the Installation, Maintenance, and Use of Local Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72B-75 Standard for the Installation, Maintenance, and Use of Auxiliary Protective Signaling Systems for Fire Alarm Service.

NFPA 72C–75 Standard for the Installation, Maintenance, and Use of Remote Station Protective Signaling Systems.
NFPA 72D–75 Standard for the Installation, Maintenance, and Use of Proprietary Protective Signaling Systems for Watchman, Fire Alarm, and Supervisory Service.
NFPA 72E–74 Standard for Automatic Fire Detectors.
NFPA 74–75 Standard for Installation, Maintenance, and Use of Household Fire Warning Equipment.
NFPA 76A–73 Standard for Essential Electrical Systems for Health Care Facilities.
NFPA 77–72 Recommended Practice on Static Electricity.
NFPA 80–77 Standard for Fire Doors and Windows.
NFPA 86A–73 Standard for Ovens and Furnaces; Design, Location and Equipment.
NFPA 88A–73 Standard for Parking Structures.
NFPA 88B–73 Standard for Repair Garages.
NFPA 91–73 Standard for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal, or Conveying.
NFPA 101–78 Code for Safety to Life from Fire in Buildings and Structures. (Life Safety Code.)
NFPA 325M–69 Fire–Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.
NFPA 493–75 Standard for Intrinsically Safe Apparatus for Use in Class I Hazardous Locations and its Associated Apparatus.
NFPA 496–74 Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations.
NFPA 497–75 Recommended Practice for Classification of Class I Hazardous Locations for Electrical Installations in Chemical Plants.
NFPA 505–75 Fire Safety Standard for Powered Industrial Trucks Including Type Designations and Areas of Use.
NMAB 353–1–79 Matrix of Combustion–Relevant Properties and Classification of Gases, Vapors, and Selected Solids.
NMAB 353–2–79 Test Equipment for Use in Determining Classifications of Combustible Dusts.
NMAB 353–3–80 Classification of Combustible Dusts in Accordance with the National Electrical Code.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–24–95699, filed 3/30/82.]

WAC 296–24–960 Proximity to overhead power lines. (1) General requirements – high voltage lines.

(a) Minimum clearance.

(i) No work shall be performed, no material shall be piled, stored or otherwise handled, no scaffolding, commercial signs, or structures shall be erected or dismantled, nor any tools, machinery or equipment operated within the specified minimum distances from any energized high voltage electrical conductor capable of energizing the material or equipment; except where the electrical distribution and transmission lines have been deenergized and visibly grounded at point of work, or where insulating barriers not a part of or an attachment to the equipment have been erected, to prevent physical contact with the lines, equipment shall be operated proximate to, under, over, by, or near powerlines only in accordance with the following:

(ii) For lines rated 50 kv. or below, minimum clearance between the lines and any part of the equipment or load shall be 10 feet.

(iii) For lines rated over 50 kv. minimum, clearance between the lines and any part of the equipment or load shall be 10 feet plus 0.4 inch for each 1 kv. over 50 kv., or twice the length of the line insulator but never less than 10 feet.

(b) Overhead electric lines. Where overhead electric conductors are encountered in proximity to a work area, the employer shall be responsible for:

(i) Ascertaining the voltage and minimum clearance distance required, and

(ii) Maintaining the minimum clearance distance, and

(iii) Ensuring that the requirements of subsection (1) of this section are complied with.

(c) Not covered: Employees working under chapters 296–32 and 296–45 WAC.

(2) Low voltage lines. When work is being carried out in proximity to energized electrical service conductors operating at 750 volts or less, such work shall be performed in a manner to prevent contact by any worker with the energized conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–13–045 (Order 82–22), § 296–24–960, filed 6/11/82; 82–02–003 (Order 81–32), § 296–24–960, filed 12/24/81.]

Chapter 296-27 WAC
RECORDKEEPING AND REPORTING

WAC
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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-27-200 Posting of notice, availability of act regulations and applicable standards. [Order 74-22, § 296-27-200, filed 5/6/74.] Repealed by Order 75-14, filed 4/14/75. See WAC 296-350-400.

WAC 296-27-010 Purpose and scope. The regulations of this chapter implement sections RCW 49.17.050(5), 49.17.220(1), 49.17.220(2), 49.17.230, and 49.17.260 of the Washington Industrial Safety and Health Act of 1973. These sections provide for recordkeeping and reporting by employers covered under the act as necessary or appropriate for enforcement of the act, for developing information regarding the causes and prevention of occupational accidents and illnesses, and for maintaining a program of collection, compilation, and analysis of industrial safety and health statistics.

Pursuant to the provisions of 29 CFR 1904.10, records maintained by an employer and reports submitted pursuant to, and in accordance with the requirements of an approved state plan under section 18 of the Federal Occupational Safety and Health Act of 1970 (Public Law 91-596, 84 STAT. 1590) shall be regarded as compliance with 29 CFR Part 1904 – "Recording and reporting occupational injuries and illnesses."

Compliance with and requirements of this chapter, as recognized by the Washington industrial safety and health state plan, is regarded as compliance with the provisions of the above-cited federal requirements. Employers complying with the recordkeeping and reporting requirements of this chapter are not required to keep records as required by the federal recordkeeping and reporting regulations (Ref. 29 CFR 1904.10).

The recordkeeping and reporting requirements of this chapter are separate and distinct from the record keeping and reporting requirements under Title 51 RCW (the Industrial Insurance Act) unless otherwise noted in this chapter.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-010, filed 6/28/78; Order 74-22, § 296-27-010, filed 5/6/74.]

WAC 296-27-020 Definitions. (1) "Act" means the Washington Industrial Safety and Health Act of 1973, chapter 49.17 RCW, as now or hereafter amended.

(2) The definitions and interpretations included in RCW 49.17.020 shall be applicable to such terms when used in this chapter, unless a different interpretation is clearly required by the context.

(3) "Recordable occupational injuries or illnesses of employees" means any occupational injury or illness of employees which result in:

(a) Occupational fatalities, regardless of the length of time between injury and death, or the length of the illness preceding the time of death (no recording is required for fatalities occurring after a termination of employment, except when recording may otherwise be required by a specific industrial safety and health standard adopted pursuant to the act); or

(b) Lost workday cases, other than fatalities, that result in lost workdays (see subsection (6) of this section); or

(c) Occupational illnesses, or nonfatal cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as fatalities or lost workday cases.

(4) "Medical treatment" means and includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

(5) "First aid" means any one-time treatment, and any follow-up visit or visits for the purpose of observation of minor scratches, cuts, burns, splinters and so forth which do not ordinarily require professional medical care. Such one-time treatment and follow-up visit or visits for the purpose of observation are considered first aid even though provided by a physician or registered professional personnel.

(6) "Lost workdays":

(a) "Lost workdays – days away from work" means the number of days (consecutive or not) after the day of injury or illness which the employee would have worked but could not because of occupational injury or illness. The number of "lost workdays – days away from work," should not include the day of the injury, or the day the illness occurred, or any days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays.

(b) "Lost workdays – days of restricted activity" means the number of workdays (consecutive or not) on which, because of the injury or illness:

(i) The employee was assigned to a temporary job; or

(ii) The employee worked at a permanent job less than full time; or

(iii) The employee worked at a permanently assigned job but could not perform all the duties normally assigned to that job.

The number of "lost workdays – days of restricted activity" should not include the day of the injury or the day the illness occurred, or any other days which the employee was not scheduled to work; e.g. Saturday, Sunday, or holidays, etc.

(7) "Establishment" means:

(a) A single physical location where business is conducted or where services or industrial operations are performed. (For example: A factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office.) Where distinctly separate activities are performed at a single physical location, such as contract construction activities operated from the same physical location as a lumber yard, each activity shall be treated as a separate establishment.

(b) For firms engaged in activities such as agriculture, construction, transportation, communications, electric, gas or sanitary services, which may be physically disbursed, "establishment" means a place to which employees report each day.

(c) For employees who do not primarily report or work at a single establishment, and who are generally not supervised in their daily work, such as travelling salesmen, technicians, engineers, etc., "establishment" means the location from which they are paid, or the base from which employees operate to carry out their activities.

(8) Establishments classified in standard industrial classification codes (SIC) 52 through 89.

(a) Establishments whose primary activity constitutes retail trade; finance, insurance, real estate and services are classified in SIC's 52 through 89.

(b) Retail trades are classified as SIC's 52 through 59 and for the most part include establishments engaged in selling merchandise to the general public for personal or household consumption. Some of the retail trades are: Automotive dealers, apparel and accessory stores, furniture and home furnishing stores, and eating and drinking places.

(c) Finance, insurance and real estate are classified as SIC's 60 through 67 and include establishments which are engaged in banking, credit other than banking, security dealings, insurance, and real estate.

(d) Services are classified as SIC's 70 through 89 and include establishments which provide a variety of services for individuals, businesses, government agencies, and other organizations. Some of the service industries are: Personal and business services, in addition to legal, education, social, and cultural; and membership organizations.

(e) The primary activity of an establishment is determined as follows: For finance, insurance, real estate, and services establishments, the value of receipts or revenue for services rendered by an establishment determines its primary activity. In establishments with diversified activities, the activities determined to account for the largest share of production, sales or revenue will identify the primary activity. In some instances these criteria will not adequately represent the relative economic importance of each of the varied activities. In such cases, employment or payroll should be used in place of the normal basis for determining the primary activity.

(9) "WISHERS" means Washington industrial safety and health evaluation and reporting system.

(10) "Occupational illness" means such illness as arises naturally and approximately out of employment under the provisions of the act.

Note: Examples of occupational illnesses appear on the instruction page of Form OSHA No. 200.

(11) "Occupational" means industrial and industrial means occupational.

(12) "OSHA" means occupational safety and health administration.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-27-020, filed 7/13/83, effective 9/12/83. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17-.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-020, filed 6/28/78; Order 74-22, § 296-27-020, filed 5/6/74.]

WAC 296-27-030 Log and summary of occupational injuries and illnesses. (1) Except as provided in subsection (2) of this section, each employer shall:

(a) Maintain in each establishment a log and summary of all recordable occupational injuries and illnesses for that establishment; and

(b) Enter each recordable injury and illness on the log as early as practicable, but no later than six working days after receiving information that a recordable case has occurred. For this purpose Form OSHA No. 200 or an equivalent which is as readable and comprehensible to a person not familiar with it shall be used. The log and summary shall be completed in the detail provided in instructions on Form OSHA No. 200.

(2) Any employer may maintain the log and summary of all recordable occupational injuries and illnesses at a place other than the establishment or by means of data processing equipment, or both, if at each of the employer's establishments there is available a copy of the log and summary which reflects separately the injury and illness experience of that establishment complete and current to a date within forty-five calendar days.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-030, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-030, filed 6/28/78; Order 74-22, § 296-27-030, filed 5/6/74.]

WAC 296-27-040 Period covered by logs. Logs and summaries of occupational injuries and illnesses shall be established on a calendar year basis.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-040, filed 7/31/79; Order 74-22, § 296-27-040, filed 5/6/74.]

WAC 296-27-050 Supplementary record. In addition to the log and summary of occupational injuries and illnesses provided for under WAC 296-27-030, each employer shall have available for inspection at each establishment or other location as specified in WAC 296-27-020 within six working days after receiving information that a recordable case has occurred, a supplementary record for each occupational injury or illness for that establishment. The record shall be completed in the detail prescribed in the instructions accompanying Form OSHA No. 101. The department of labor and industries accident report Form LI-210-130 may be used as an alternative to the Form OSHA 101. Other reports are acceptable alternative records if they contain the information required by Form OSHA No. 101. If no acceptable alternative record is maintained for other purposes, Form OSHA No. 101 shall be used for the necessary informmation or shall be otherwise maintained in a convenient form.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-050, filed 7/31/79. Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-050, filed 6/28/78; Order 74-22, § 296-27-050, filed 5/6/74.]

WAC 296-27-060 Annual summary. (1) Each employer shall post an annual summary of occupational injuries and illnesses for each establishment. This summary shall consist of a copy of the year's totals from the Form OSHA No. 200 and the following information from that form: Calendar year covered, company name, establishment name, establishment address, certification signature, title, and date. A Form OSHA No. 200 shall be used in presenting the summary. If no injuries or illnesses occurred in the year, zeros must be entered on the totals line, and the form must be posted.

(2) The summary shall be completed by February 1 beginning with the calendar year 1979.

(3) Each employer, or the officer or employee of the employer who supervises the preparation of the log and summary of occupational injuries and illnesses, shall certify that the annual summary of occupational injuries and illnesses is true and complete. The certification shall be accomplished by affixing the signature of the employer, or the officer or employer who supervises the preparation of the annual summary of occupational injuries and illnesses, at the bottom of the last page of the log and summary, or by appending a separate statement to the log and summary certifying that the summary is true and complete.

(4)(a) Each employer shall post a copy of the establishment's summary in each establishment. The summary covering the previous calendar year shall be posted no later than February 1, and shall remain in place until March 1. For employees who do not primarily report or work at a single establishment, or who do not report to any fixed establishment on a regular basis, employers shall satisfy this posting requirement by presenting or mailing a copy of the summary portion of the log and summary during the month of February of the following year to each such employee who receives pay during that month. For multi-establishment employers where operations have closed down in some establishments during the calendar year, it will not be necessary to post summaries for those establishments.

(b) A failure to post a copy of the establishment's summary, or otherwise satisfy the posting requirements as specified in this section, may result in the issuance of citations and assessments of penalties pursuant to RCW 49.17.120 and 49.17.180.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-060, filed 6/28/78; Order 74-22, § 296-27-060, filed 5/6/74.]

WAC 296-27-070 Retention of records. Records provided for in WAC 296-27-030, 296-27-050, and 296-27-060 including Form OSHA No. 200 and its predecessor Forms WISHA No. 100 and WISHA No. 102 shall be retained in each establishment for five years following the end of the year to which they relate.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-070, filed 7/31/79; Order 74-22, § 296-27-070, filed 5/6/74.]

WAC 296-27-075 Employees not in fixed establishments. Employers of employees engaged in physically dispersed operations, such as occur in construction, installation, repair or service activities, who do not report to any fixed establishment on a regular basis, but are subject to common supervision, may satisfy the provisions of WAC 296-27-030, 296-27-050, and 296-27-070, with respect to such employees by:

(1) Maintaining the required records for each operation, or group of operations which is subject to common supervision (field superintendent, field supervisor, etc.) in an established central place;

(2) Having the address and telephone number of the central place available at each worksite; and

(3) Having personnel available at the central place during normal business hours to provide information from the records maintained there by telephone or mail.

[Order 74-22, § 296-27-075, filed 5/6/74.]

WAC 296-27-077 Small employers. (1) An employer who had no more than ten employees at any time during the calendar year immediately preceding the current calendar year need not comply with any of the requirements of this chapter except the following:

(a) Obligation to report under WAC 296-27-090 concerning fatalities or multiple hospitalization accidents; and

(b) Obligation to maintain a log of occupational injuries and illnesses under WAC 296-27-030 and to make reports under WAC 296-27-140 upon being notified in writing by the bureau of labor statistics and the department of labor and industries that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-077, filed 6/28/78.]

WAC 296-27-078 Private employers classified in standard industrial classification codes (SIC) 52 through 89, (except 52 through 54, 76, 79 and 80). A private employer whose establishment is classified in SIC's 52 through 89, (excluding 52 through 54, 70, 75, 76, 79 and 80) need not comply, for such establishment, with the recordkeeping requirements of this chapter except the following:

(1) Obligation to report under WAC 296-27-090 concerning fatalities or multiple hospitalization accidents.

(2) Obligation to maintain a log of occupational injuries and illnesses under WAC 296-27-140, upon being notified in writing by the Bureau of Labor Statistics that the employer has been selected to participate in a statistical survey of occupational injuries and illnesses.

(3) The requirements of this section shall become effective January 1, 1984.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-27-078, filed 11/30/83; 83-15-017 (Order 83-19), § 296-27-078, filed 7/13/83, effective 9/12/83.]

WAC 296-27-080 Access to records. (1) Each employer shall provide upon request records provided for in WAC 296-27-030, 296-27-050, and 296-27-060, for inspection and copying by designated or authorized representatives of the department of labor and industries, compliance safety and health officers of the Occupational Safety and Health Administration, U.S. Department of Labor during any occupational safety and health inspection provided for under 29 CFR 1903 and section 8 of the Federal Occupational Safety and Health Act, by any representatives of the Bureau of Labor Statistics, U.S. Department of Labor, or by any representative of the Secretary of Health, Education and Welfare during any investigation under section 20(b) of the Federal Occupational Safety and Health Act.

(2)(a) The log and summary of all recordable occupational injuries and illnesses (OSHA No. 200) (the log) provided for in WAC 296-27-030 shall, upon request, be made available by the employer to any employee, former employee, and to their representatives for examination and copying in a reasonable manner and at reasonable times. The employee, former employee, and their representatives shall have access to the log for any establishment in which the employee is or has been employed.

(b) Nothing in this section shall be deemed to preclude employees and employee representatives from collectively bargaining to obtain access to information relating to occupational injuries and illnesses in addition to the information made available under this section.

(c) Access to the log provided under this section shall pertain to all logs retained under the requirements of WAC 296-27-070.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-080, filed 7/31/79; Order 74-22, § 296-27-080, filed 5/6/74.]

WAC 296-27-090 Reporting of fatality or multiple hospitalization accidents. (1) Within twenty-four hours after the occurrence of an employment accident which results in an immediate or probable fatality to one or more employees, or which results in hospitalization of two or more employees, the employer of any employee so injured or killed shall report the accident either orally or in writing to the nearest office of the department. The reporting may be by telephone or telegraph. The reporting shall relate the circumstances of the accident, the number of fatalities, and the extent of any injuries. The director may require such additional reports, in writing or otherwise, as he deems necessary, concerning the accident.

(2) Equipment involved in an accident resulting in an immediate fatality or in the hospitalization of two or more employees shall not be moved until a representative of the division of industrial safety and health investigates the accident and authorizes removal of such equipment, when removal of such equipment is necessary in order to prevent further accident or to remove the victim, such equipment may be moved as required.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-090, filed 1/17/86; Order 74-22, § 296-27-090, filed 5/6/74.]

WAC 296-27-100 Falsification, failure to keep records or reports. (1) RCW 49.17.190(2) of the act provides that "whoever knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this chapter shall, upon conviction, be guilty of a gross misdemeanor and be punished by a fine of not more than $10,000, or by imprisonment of not more than six months, or by both."

(2) Failure to maintain records or file reports required by this chapter, or in the detail required by the forms and instructions issued under this chapter, may result in the issuance of citations and assessment of penalties as provided for in RCW 49.17.120, 49.17.140, 49.17.180, or 49.17.190.

[Order 74-22, § 296-27-100, filed 5/6/74.]

WAC 296-27-110 Change of ownership. Where an establishment has changed ownership, the employer shall be responsible for maintaining records and filing reports only for that period of the year during which he owned such establishment. However, in the case of any change of ownership, the employer shall preserve those records, if any, of the prior ownership which are required to be kept under this chapter. These records shall be retained

at each establishment to which they relate, for the period, or the remainder thereof, required under WAC 296-27-070.

[Order 74-22, § 296-27-110, filed 5/6/74.]

WAC 296-27-120 Petitions for recordkeeping exceptions. (1)(a) In order to achieve a uniform, national system for the recordkeeping and reporting of occupational injuries and illnesses, the state of Washington and the United States Department of Labor have agreed that as applied to employers as defined by subsection 3(5) of the Occupational Safety and Health Act of 1970 (Public Law 91-596, 81 STAT 1950) the state shall not grant any variances or exceptions to the record keeping and reporting regulations of this chapter, with the exception of approval of forms to serve as the substitutes for OSHA 101 and OSHA 200 (see WAC 296-27-030 and 296-27-050), without prior approval of the bureau of labor statistics.

(b) Any public employer who wishes to maintain records in a manner different from that prescribed by this chapter may submit a petition containing the information specified in subsection (5) of this section to the director, Department of Labor and Industries, General Administration Building, Olympia, Washington 98504[.]

(2) All petitions for authorization to maintain records in a manner different than that required by this chapter shall be submitted to the director or directly to the bureau of labor statistics. The director, upon receipt of a petition submitted pursuant to the provisions of subsection (3) of this section, shall immediately forward copies of same to appropriate officials of the bureau of labor statistics. Should said federal officials inform the director of their belief in the desirability or necessity of additional notice or conferences pursuant to provisions of subsection (7) of this section, the director shall provide or cause to be provided such additional notice and/or afford an opportunity for interested parties for informal conferences or hearings concerning the petition. For the purposes of this section, the occupational safety and health administration and the bureau of labor statistics shall be considered interested parties.

The bureau of labor statistics shall be afforded the opportunity to review the petition and any comments submitted in regard thereto. The director shall not grant the petition prior to a finding by the said federal agency that the alternative procedure proposed will not hamper or interfere with the purposes of the Occupational Safety and Health Act of 1970.

(3) Submission of petition. Any employer, who for good cause wishes to maintain records in a manner different from that required by this chapter, may submit a petition containing the information specified in subsection (5) of this section to the director.

(4) Opportunity for comment. Affected employees, or their representatives shall have an opportunity to submit written data, views, or arguments concerning the petition to the director within ten working days following the receipt of notice under subdivision (5)(e) of this section.

(5) Contents of petition. A petition filed under subsection (3) of this section shall include:

(a) The name and address of the applicant;

(b) The address of the place or places (establishment or establishments) of the employment involved;

(c) Specifications of the reasons for seeking relief;

(d) A description of the different recordkeeping procedures which are proposed by the applicant;

(e) A statement that:

(i) The applicant has informed his affected employees of the petition by giving a copy thereof to them or to their authorized representative, posting a statement giving a summary of the petition and specifying where a copy of the petition may be obtained, at the place or places where notices to employees are normally posted, and by other appropriate means. A statement posted pursuant to these provisions shall be posted in each establishment identified in WAC 296-27-120 (4)(b).

(ii) The applicant has in the same manner informed affected employees and their representatives of their rights under subsection (3) of this section.

(6) Additional notice - conferences.

(a) In addition to the actual notice provided for in subdivision (5)(e) of this section, the director may provide, or cause to be provided, such additional notice of the petition as he may deem appropriate.

(b) The director may also afford an opportunity to interested parties for informational conferences or hearings concerning the petition.

(7) After review of the petition, and any comments submitted in regard thereto, and upon completion of any necessary appropriate investigation concerning the petition, if the director finds that the alternative procedure proposed will not hamper or interfere with the purposes of the act, and will provide equivalent information, he may grant the petition subject to such conditions as he may determine appropriate, subject to the provisions of WAC 296-200-120(2), and subject to revocation for cause.

(8) Publication. When any relief is granted to an applicant under this chapter, notice of such relief, and the reasons therefor, may be published in the federal register.

(9) Revocation. Whenever any relief under this section is sought to be revoked for any failure to comply with the conditions thereof, an opportunity for informal hearing or conference shall be afforded to the employers and effected employees, or their representatives, and other interested parties. Except in cases of willfulness or where public safety or health requires otherwise, before the commencement of any such informal proceeding, the employer shall:

(a) Be notified in writing of the facts of conduct which may warrant the action and,

(b) Be given an opportunity to demonstrate or achieve compliance.

(10) Compliance after submission of petitions. The submission of a petition or any delay by the director in acting upon a petition shall not relieve any employer from any obligation to comply with the provisions of this chapter.

(11) The director shall honor exceptions to the provisions of 29 CFR 1904 - RECORDING AND REPORTING

OCCUPATIONAL INJURIES AND ILLNESSES, granted by the bureau of labor statistics to companies having establishments in states other than Washington, when such exceptions apply to the establishments within this state.

(12) There shall be consultation between the appropriate representatives of the department, the occupational safety and health administration, and the bureau of labor statistics in order to enjoy the effective implementation of this chapter.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-120, filed 6/28/78; Order 76-29, § 296-27-120, filed 9/30/76; Order 74-22, § 296-27-120, filed 5/6/74.]

Reviser's note: RCW 34.04.058 requires the use of underlining and deletion marks to indicate amendments to existing rules, and deems ineffectual changes not filed by the agency in this manner. The bracketed material in the above section does not appear to conform to the statutory requirement.

WAC 296-27-121 Additional recordkeeping requirements. The director may require that additional records and reporting be kept and done in order to achieve the purposes of the act.

[Order 76-29, § 296-27-121, filed 9/30/76.]

WAC 296-27-130 Description of statistical program. RCW 49.17.260 directs the director to develop and maintain a program of collection, compilation and analysis of occupational safety and health statistics. The program shall include periodic surveys of occupational injuries and illnesses.

[Statutory Authority: RCW 49.17.040, 49.17.150, and 49.17.240. 79-08-115 (Order 79-9), § 296-27-130, filed 7/31/79; Order 74-22, § 296-27-130, filed 5/6/74.]

WAC 296-27-140 Duties of employers--Statistical program. Upon receipt of an occupational injuries and illnesses survey form, Form OSHA No. 200-S, the employer shall promptly complete the form in accordance with the instructions contained therein and return it in accordance with the aforesaid instructions.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-140, filed 6/28/78; Order 74-22, § 296-27-140, filed 5/6/74.]

WAC 296-27-150 Effective date of regulations. Pursuant to the finding of the director that additional time is needed to afford affected employers a reasonable opportunity to make changes in methods, means, or practices to meet the requirements of WAC 296-27-010 through 296-27-140, the effective date of these requirements shall be January 1, 1978.

[Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17-.040, 49.17.050 and 49.17.240. 78-07-052 (Order 78-10), § 296-27-150, filed 6/28/78; Order 74-22, § 296-27-150, filed 5/6/74.]

WAC 296-27-15501 Division of industrial safety and health, public records. Requests for inspection or copies of records and documents in the custody of the division of industrial safety and health should be made to the division's designated records officer. The division's records are maintained at 814 East Fourth Ave., P.O. Box 207, Olympia, WA 98504. General information can be obtained at service locations and field offices throughout the state.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15501, filed 1/17/86.]

WAC 296-27-15503 Confidential reports within the department's files. Whenever a divisional file contains any report or information from an independent source that has requested that the information contained in the department's file be protected as confidential, such information will not be released without court order. When such information is withheld the records officer shall clearly identify which information has been withheld and the information's source.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15503, filed 1/17/86.]

WAC 296-27-15505 Accident investigation reports. Results of accident investigations and related reports are confidential and will not be freely released by the department, see RCW 49.17.260.

Accident investigation reports will be made available without the need of a court order only to the following:

(1) Employees of governmental agencies in the performance of their official duties;

(2) The injured worker, his legal representative, or his labor organization representative;

(3) The legal representative or labor organization representative of a deceased worker, including any beneficiary of a deceased worker actually receiving benefits under the terms of Title 51 RCW, the Industrial Insurance Act. The records officer may provide accident investigation reports to the closest surviving member of the deceased worker's immediate family;

(4) The employer of any injured or deceased workman;

(5) Any other employer or person whose actions or business operations are the subject of the report or investigation; or

(6) Any attorney representing a party in any pending legal action in which an investigative report constitutes material and relevant evidence.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-15505, filed 1/17/86.]

WAC 296-27-160 Safety and health inspections. The Washington Industrial Safety and Health Act (WISHA), chapter 49.17 RCW, authorizes the department of labor and industries (the department) to inspect work places to protect the health and safety of employees. The primary purpose of safety and health inspections is to determine whether employers are (1) complying with safety and health standards and regulations promulgated under WISHA, and (2) furnishing places of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to their employees. The following sections describe the method, manner, and frequency of the department's safety and health inspections.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-160, filed 6/22/81.]

WAC 296-27-16001 Definitions. For the purpose of these inspection rules:

(1) "BLS" shall mean bureau of labor statistics.

(2) "Compensable claim" shall mean an industrial insurance claim in which an injured worker or dependent has received, or is expected to receive, a time-loss, permanent partial disability, pension or burial payment. For the purposes of these rules, a compensable claim arises only if the injured worker loses three or more days because of injury.

(3) "Department" shall mean the department of labor and industries.

(4) "Incidence rate" shall mean the number of lost work day cases per 200,000 hours of exposure or 100 full-time equivalent workers.

(5) "Industrial insurance modification factor" is based on a comparison of the actual incurred losses to the expected losses for the oldest three of the four fiscal years preceding the effective date of premium rates.

(a) A modification factor greater than 1.0000 indicates that an employer's actual incurred losses are greater than expected.

(b) A modification factor of less than 1.0000 indicates that an employer's actual incurred losses are less than expected.

(c) New firms and some firms qualifying for transition rating adjustments are assigned a base modification factor of 1.0000. Self-insured employers will be assigned a modification factor of less than 1.0000.

(6) "Industry" shall mean a group of businesses classified by standard industrial classification code according to the type of activity in which they are engaged.

(7) "Target inspections" shall mean inspections scheduled under WITS.

(8) "WISHA" shall mean the Washington Industrial Safety and Health Act.

(9) "WITS" shall mean the Washington inspection targeting system.

(10) "Working hours" shall mean those times that an employee or employees work at the work place.

(11) "Work place" shall mean any plant, yard, premises, room, or other place where an employee or employees are employed for the performance of labor or service over which the employer has the right of access or control, and includes, but is not limited to, all work places covered by industrial insurance under Title 51 RCW, as now or hereafter amended. Work place shall include temporary labor camps.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16001, filed 6/22/81.]

WAC 296-27-16003 Conduct of inspections. (1) An inspection shall be made during working hours of the work place being inspected, unless the inspection is of a fatality, a catastrophe, or a complaint of imminent danger. RCW 49.17.190(1) prohibits an employer from receiving advance notice of an inspection, except as authorized by the director or his or her authorized representative.

(2) When an inspector arrives at a work place, he or she shall present his or her credentials to the highest available management official at the work place. The inspector shall keep trade secret information confidential as required by RCW 49.17.200. If necessary, the inspector may sign a form, approved by the department, that is designed to protect an employer's trade secrets. The inspector may sign a visitor's register, plant pass, or other book or form used to control the entry and movement of persons. If a governmental security clearance is required for entry, the inspector shall obtain it before the inspection.

(3) Before beginning an inspection, the inspector should conduct a joint opening conference with the employer and employee representatives. The employee representative is the employee designated by the union, safety committee, or employees to accompany the inspector during the inspection. If the inspector determines that an employee representative is not available at the work place, separate conferences with the representatives can be held.

(4) A representative of the employer and a representative authorized by the employees shall have the opportunity to accompany the inspector during the inspection. During the inspection, the inspector may interview in private any employee who wants to discuss a possible violation. The inspector may conduct an interview at any time during an inspection. If the inspector determines that an interview would unduly hinder an employer's operations, however, the inspector should interview the employee during a break or after working hours. To determine whether an interview would unduly hinder an employer's operations, the inspector may consider such factors as the time the employee would spend away from machinery and the effects of the interview on other employees or processes. If the inspector receives a complaint during an inspection, he or she should inspect the alleged violation during that inspection.

The inspector may photograph a violation, take environmental samples, conduct tests, use sampling devices worn by employees, and employ other reasonable investigative techniques. A technique shall not be used if it reasonably could be believed to cause a hazard.

An employer may immediately correct some violations during the inspection. The inspector shall record the conditions and corrections to help judge the employer's good faith, compliance, and cooperation. Although corrected, a violation shall remain the basis for a citation and a proposed penalty.

(5) At the end of the inspection, the inspector should conduct a joint closing conference with the employer and employee representatives. If it is impractical to hold a joint conference, separate conferences can be held. The inspector should advise both the employer and employee representatives of their right to participate in later conferences.

An inspector shall not show or reveal the name of a complainant to the employer, unless the complainant authorizes the inspector to do so.

(6) If a safety inspector notices potential health hazards that indicate an industrial hygiene inspection is necessary, the inspector should report the hazards and request a health inspection. If a health inspector notices

potential safety hazards that indicate a safety inspection is necessary, the inspector should report the hazards and request a safety inspection.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16003, filed 6/22/81.]

WAC 296-27-16005 Objects of inspection. A safety and health inspection will primarily check for compliance with the substantive standards issued under WISHA. However, an inspector will also determine whether an employer has posted the WISHA notice that informs employees of their rights and obligations. The inspector may also inspect the log and summary of recordable occupational injuries and illnesses, supplementary records of occupational injuries and illnesses, records of employee exposure to toxic chemicals and harmful physical agents, and other records mandated by specific occupational safety and health regulations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16005, filed 6/22/81.]

WAC 296-27-16007 Citations and penalty assessments. During an inspection, the inspector shall record the violations he or she observes on a compliance worksheet. From the information written on the worksheet, and the photographs and tests, an inspector shall prepare a citation and notice and, if applicable, a proposed penalty assessment. The citation and notice and the proposed penalty assessment shall be sent to the employer and may also be given to the highest available management official at the work place. The citation and notice shall contain an abatement date for each violation. This is the date by which the employer must correct the violation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16007, filed 6/22/81.]

WAC 296-27-16009 Follow-up inspections. (1) If an employer has been cited for a serious violation, or a general violation for which a penalty was proposed, the department shall conduct a follow-up inspection or obtain written verification from the employer that the violation has been abated. If there is more than one abatement date, more than one written verification or more than one follow-up inspection may be necessary.

(2) If an employer verifies abatement of a violation in writing, the employer shall post a copy of the written verification in a prominent place at or near each place where the violation occurred for at least three working days. See WAC 296-350-400 (8)(b).

(3) The department may, but is not required to, conduct follow-up inspections after issuing a citation other than those set out in subsection (1) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-064 (Order 86-02), § 296-27-16009, filed 1/17/86; 81-14-006 (Order 81-13), § 296-27-16009, filed 6/22/81.]

WAC 296-27-16011 Objection to inspection. (1) If the employer refuses to permit an inspection, or if the employer permits an inspection but interferes with or limits an important part of the inspection, the inspector may end the inspection or confine the inspection to the areas or limits that the employer will allow. The inspector shall attempt to ascertain the reason for the refusal, interference, or limitation, and shall report it to his or her supervisor. The supervisor may consult with the assistant attorney general. The department may seek an ex parte inspection warrant or other compulsory process from a court if an inspection is refused or limited.

(2) The department may seek an ex parte inspection warrant or other compulsory process from a court before an inspection if the department anticipates that permission to conduct the inspection might be denied or improperly limited.

(3) The department will seek an inspection warrant in response to a complaint only if the complaint is in written form and signed by the complainant, unless the complainant alleges a hazard which could cause serious injury or death.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-27-16011, filed 11/30/83; 81-14-006 (Order 81-13), § 296-27-16011, filed 6/22/81.]

WAC 296-27-16013 WISHA--Required investigations and inspections. The department conducts the following kinds of inspections:

(1) The first kind of investigations or inspections is specifically required by WISHA, and includes investigations and inspections of fatalities, catastrophes, serious accidents, and complaints that allege an imminent danger or conditions that threaten physical harm to employees.

(2) The second kind of inspections is the routine inspection required by WISHA and made under the Washington inspection targeting system.

The department also conducts investigations or inspections of complaints or incidents that fall under subsection (1) of this section whenever it receives a complaint or knowledge of an incident.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16013, filed 6/22/81.]

WAC 296-27-16015 WITS--In general. Some work places, because of the nature of their industry are likely to have more hazards than others. The health and safety of employees will be more efficiently protected if the department concentrates its inspections on the most hazardous work places and industries. The WITS program is a system that identifies the most hazardous industries and work places, and ranks them in an objective order for inspections.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16015, filed 6/22/81.]

WAC 296-27-16017 WITS--Safety. Some of the terms used in this section are defined in WAC 296-27-16001.

The department identifies the most hazardous industries and work places through information from the industrial insurance division of the department and the BLS occupational injury and illness survey.

(1) To identify the most hazardous industries, the department obtains data from the industrial insurance division that show the number of compensable claims in each industry for the most recent calendar year. The data are compiled statewide. The department does not count compensable claims that are related to health or likely could not have been prevented by a safety inspection, including compensable claims arising from contagious or infectious disease, dermatosis, exposure to low temperature, hearing impairment, environmental heat, hernia and rupture, systemic poisoning, pneumoconiosis, nonionizing and ionizing radiation, hemorrhoids, circulatory system, complications to medical care, eye diseases, medical disorders, neoplasm, nervous system, respiratory system, ill-defined conditions, NEC occupational disease, sexual assault, absence of physical injury, or heart attack. WITS also disregards injuries and illnesses caused by kicking, continual noise, bites, assaults by fellow workers, assaults by criminals, stabs, bodily reactions, overexertions, exposure to radiation, public transportation accidents, motor vehicle accidents, gunshots, and plane crashes.

The department ranks industries according to data compiled statewide according to the number of compensable claims from within each industry. The department also reviews the statewide lost work day case incidence rate for the same industries. Each industry is ranked according to the number of compensable claims, and it is also ranked according to the lost work day case incidence rate. The department combines the two rankings to produce a list of the 25 most hazardous industries in the state. The lists are compiled annually.

(2) Each month, the department examines the industrial insurance modification factors and recent compensable claims charged to employers where payments were made in the previous calendar month. For self-insured employers, claims received on Form LI 207-2 SI accident report for the previous month are counted.

(3) A work place is targeted for a safety inspection if it falls within the following categories:

(a) Category one. Work places having two or more compensable claims and having a modification factor equal to or greater than 1.0000.

(b) Category two. Work places having two or more compensable claims and having a modification factor of less than 1.0000.

(c) Category three. Work places having one compensable claim and having a modification factor equal to or greater than 1.0000.

(d) Category four. Work places in hazardous industries having one compensable claim and having a modification factor of less than 1.0000.

(4) If more than one work place appears in the same category, the department schedules inspections of the work place with the largest number of worker hours first, and each work place with the largest number of worker hours thereafter.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16017, filed 6/22/81.]

WAC 296-27-16019 WITS--Safety. (1) After the department completes all inspections in the categories listed in WAC 296-27-16017 (3)(a) through (d), the department inspects work places that are in hazardous industries. The hazardous industries are those industries that have been selected under the system described in WAC 296-27-16017(1).

(2) The department chooses work places in hazardous industries for inspection in the following manner:

(a) The department calculates the percentage of its total number of inspections that each of the 25 hazardous industries will receive by means of a percentage distribution calculation. The percentage distribution calculation ensures that the most hazardous industries will be assigned the largest number of inspections, and the least hazardous industries will be assigned the fewest inspections.

(b) The department determines the number of inspections that will be made during the year statewide in each hazardous industry by applying the results of the percentage distribution to the total number of inspections conducted during the previous year statewide.

(c) From the total compensable claims statewide, the department determines the percent of compensable claims that came from the hazardous industries from each county. The department determines the number of inspections to be made within each county from the percentage of compensable claims that arose from within each county.

(d) The number of inspections allotted to each hazardous industry, as assigned within each county, is distributed among four inspection cycles. In each inspection cycle, the department first inspects work places in the most hazardous industry, then in the second most hazardous industry, and so on in descending order. After the department has inspected the work places in the least hazardous industry, a new inspection cycle begins.

(e) The department selects particular employers within hazardous industries by the number of reported worker hours for the previous year. The department inspects employers with the largest number of reported worker hours first, then the employer with the next largest number of reported worker hours, and so on in decreasing number of reported worker hours.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16019, filed 6/22/81.]

WAC 296-27-16021 WITS--Safety--Limit on number of inspections. (1) The department may not inspect more than twice a year a work place that falls within any of the categories in WAC 296-27-16017(3). The department may not inspect such a work place more than once in six months unless industrial insurance accident data available to the department indicate a hazardous condition at the work place that likely could be remedied by a safety inspection. For example, the department may notice from the industrial insurance data that the work place is causing numerous injuries of a type different from the injuries the work place had previously caused, or the department may know that an employer had installed a new plant, machinery, or

method of operation at the work place. The department may also inspect the work place of a seasonal industry twice in six months if the work place falls within WAC 296-27-16017(3).

(2) The department may not inspect a work place under WAC 296-27-16019 more than once a year. A work place that has been inspected under WAC 296-27-16017 may not be scheduled in the same year for an inspection under WAC 296-27-16019.

(3) The limits in subsection (1) and (2) of this section apply only to inspections under WAC 296-27-16017 and 296-27-16019. The limits do not apply to investigations of fatalities, accidents, catastrophes, complaints, and inspections of hazards that are in plain view and are actually observed by the inspector.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16021, filed 6/22/81.]

WAC 296-27-16023 Adjustment factors. The department may depart from the WITS scheduling in the following circumstances:

(1) If an industry is seasonal, an inspection may need to be scheduled during the peak production period.

(2) In the scheduling of industries without fixed work places, such as construction and logging, the department does not schedule inspections by the number of worker hours because of the difficulty of determining how many employees are working on a particular day.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-14-006 (Order 81-13), § 296-27-16023, filed 6/22/81.]

Chapter 296-28 WAC
CLEARANCE RULES--RAILROADS IN PRIVATE YARDS AND PLANTS

WAC

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WAC 296-28-001 Foreword. These clearance rules and regulations for common carrier railroads are issued under and by the authority of RCW 81.44.010. Formerly, certain portions of these rules were by law administered by the department of labor and industries. In 1955 jurisdiction over matters treated by these rules was placed in the Washington public service commission [now the Washington utilities and transportation commission] (RCW 43.53.055).

These rules and regulations are intended to prevent accidents which may result in either damage of equipment or injury to human beings. They are intended to protect the railroads and their employees and the general public.

[Foreword, filed 4/3/61.]

WAC 296-28-005 Beginning of order. (1) Hearing was originally held in this cause at Seattle, Washington, on the 7th day of September, 1950, pursuant to notice duly given before representatives of both the Washington public service commission and the department of labor and industries.

(2) At the time of the original hearing the Washington public service commission was vested by law with jurisdiction over the safety of railroad passengers, while jurisdiction over the safety of railroad employees was in the department of labor and industries. In 1955, as stated in the foreword, jurisdiction over the safety of railroad employees was also placed in the Washington public service commission.

(3) In order to bring the clearance rules up to date and to delete the various references to the department of labor and industries so that confusion may be avoided, these amended rules are being published.

(4) All interested parties were represented at the original hearing and their appearances are listed in our original order in this cause dated and effective December 1, 1950.

(5) In pursuance of its rule-making power, the Washington public service commission hereby determines as follows:

(a) It is ordered that subsequent to December 1, 1950, in all construction and reconstruction of tracks or structures adjacent thereto, on all railroads over which freight cars are transported or proposed to be transported, the following minimum clearances shall be allowed.

(b) It is further ordered that a railroad company shall not operate freight cars, locomotives or other rolling equipment over tracks constructed subsequent to December 1, 1950, or tracks adjacent to buildings and structures constructed or reconstructed subsequent to that date, wherein the clearances are less than those prescribed in this order.

(c) It is further ordered that where specific authority has been issued for deviation from these clearances for construction occurring subsequent to December 1, 1950, but prior to the effective date of this order, authority so issued shall remain in effect.

(6) Overhead clearances authorized in this order are applicable to tracks on which freight cars having a height to running board of fifteen feet six inches or less are transported. In the case of cars or loads exceeding fifteen feet six inches, WAC 296-28-035 and 296-28-040 must be complied with.

(7) Side clearances authorized in this order are applicable to tracks on which freight cars having an overall width not greater than ten feet ten inches are transported. In the case of cars or loads exceeding ten feet ten inches, WAC 296-28-035 and 296-28-040 must be complied with.

[Opening paragraphs, filed 4/3/61.]

Reviser's note: As stated above, the control of safety of railroad employees is vested in the Washington public service commission (now the Washington utilities and transportation commission). However,

many nonrailroad enterprises have railroad tracks and some railroad equipment. To safeguard employees of these enterprises, the department of labor and industries adopted the same railroad clearance rules enacted by the public service commission and filed the same with the code reviser's office. The filing date appears in the bracketed history note at the end of each section.

WAC 296-28-010 Exemptions. (1) When the overhead or side clearances between a track and any building, structure or facility are less than the minimum prescribed in this order, but where lawfully created prior to the effective date thereof, the minimum clearances prescribed herein shall be provided whenever the building, structure or facility is relocated or reconstructed; however, the public service commission will consider specific requests for the future continuance of heretofore lawful clearances at such reconstructed building, structure or facility when application thereof has been made as provided in subsection (3) of this section.

(2) Where restricted clearances are necessary nothing herein shall be construed as preventing the movement of material over tracks when such material is necessary in the construction or maintenance of such tracks, nor in the movement of special work equipment used in the construction, maintenance or operation of the railroad, provided such movements shall be carried on under the conditions as are necessary to provide for the safety of all concerned; nor shall these rules be applicable, provided reasonable safety precautions are observed, during periods of actual emergency due to wrecks, derailments, washouts and like conditions.

(3) If in any particular case, exemption from any of the requirements herein is deemed necessary by the carrier concerned, the public service commission will consider the application of such carrier for such exemption when accompanied by a full statement of the conditions existing and the reason why such exemption is asked. Any exemption so granted will be limited to the particular case covered by the application.

(4) The public service commission reserves the right to modify any of the provisions of these regulations in specific cases, when, in its opinion, safety of railroad employees, public safety, convenience or necessity would be served by so doing.

(5) Logging railroads, or any operation directly incident to logging, now subject to the provisions of the safety standards for logging operations, published by the division of safety of the department of labor and industries of the state of Washington, are exempted from this order.

[Exemptions section, filed 4/3/61.]

WAC 296-28-015 Definitions. (1) The overhead clearance is that distance measured along a line which is perpendicular to and joins a horizontal plane passing through the top of the highest rail and the lowest point of the overhead structure or obstruction.

(2) The side clearance is the shortest distance from centerline of track to a structure or obstruction at the side of the track.

(3) The track clearance is the shortest distance between the centerlines of adjacent tracks.

(4) Height of a freight car is the distance between the top of rail and the top of running board.

(5) Width of a freight car is twice the distance from the centerline of the car to the extreme outside part thereof.

(6) Icing platforms: The term "icing platform" shall include structures used in performing the service of icing, precooling, heating, ventilating and servicing of cars used in the handling of commodities requiring the above services.

(7) Constituted authority shall mean the public service commission.

(8) Overcrossing when used in this order means any point or place where a highway crosses a railroad by passing above the same. Clearances shall be as specified in WAC 296-28-020 (1) and (3).

(9) Undercrossing when used in this order means any point or place where a highway crosses a railroad by passing under the same. Existing laws pertaining to highways shall prevail.

[Section 1, filed 4/3/61.]

WAC 296-28-020 Overhead clearances.

(1) Overhead clearance in general	22' 6"
(2) Overhead clearance in buildings	18' 0"

The overhead clearance inside of entirely enclosed buildings may be reduced to eighteen feet, provided that this clearance shall apply only to tracks terminating within the building, and further provided, that when an overhead clearance of less than twenty-two feet six inches is established therein, all cars, locomotives or other equipment shall be brought to a stop before entering such enclosed building, the conditions provided to require such stop to be approved by constituted authority.

Note: Engine houses and car shops are exempt from these regulations.

(3) Overhead clearance in tunnels and bridges.

Minimum overhead clearance in tunnels and through bridges may be decreased to the extent defined by the half-circumference of a circle having a radius of eight feet and tangent to a horizontal line twenty-two feet six inches above top of rail at a point directly above the centerline of track.

(4) Overhead clearance – all other structures.

Minimum overhead clearance as prescribed in subsection (1) above may be decreased to the extent defined by the half-circumference of a circle having a radius of eight feet six inches and tangent to a horizontal line twenty-two feet six inches above top of rail at a point directly over the centerline of track.

(5) Overhead clearance of wires.

All wires in general shall have a minimum vertical clearance of not less than that specified by the safety rules for the installation and maintenance by electric supply and communication lines as provided by the rules for electrical construction and the electrical and communication workers safety rules of the state of Washington.

[Section 2, filed 4/3/61.]

WAC 296-28-025 Side clearances.

(1) Side clearance in general 8' 6"

Note: To further reduce operational hazards, it is recommended that, wherever practicable, all posts, pipes, warning signs and other small obstructions be given a side clearance of ten feet.

(2) Side clearance at platforms:
(a) Platforms—8" or less above top of rail 4' 8"
(b) Platforms—4' 0" or less above top of rails 5' 9"
(c) Platforms—4' 6" or less above top of rail—when used principally for loading or unloading refrigerator cars 8' 0"
(d) Icing platforms and supports 5' 9"
(e) Platforms—Other than above 8' 6"

Note: Retractable platforms, either sliding or hinged, which are attached to a permanent structure shall be so designed that when not in use no part of such retractable platform shall fall within the clearance limits herein prescribed for a platform of that height above the top of the rail.

(f) Platforms—Combinations of any above.

Note: Platforms defined under subsection (2)(a) above may be combined with either subsection (2)(c) or subsection (2)(b) provided that the lower platform presents a level surface from a point not more than four feet eight inches from centerline of track to the face of the wall of the platform with which it is combined. No other combinations will be permitted.

(g) Platforms—Extension of existing platforms.

Note: Platforms which were constructed at lawful clearances prior to the effective date of this order may be extended at existing clearances upon approval of constituted authority.

(3) Side clearance—Bridges and tunnels 8' 0"
(4) Bridges and tunnels—Upper section (see WAC 296-28-020(3))

Side clearance in through bridges and tunnels may be decreased to the extent defined by the half circumference of a circle having a radius of eight feet and tangent to a horizontal line twenty-two feet six inches above top of rail directly above centerline of track.

(5) Bridges—Lower section and structures 4' high or less.

Through bridges supporting track affected, hand rails, water barrels and refuge platforms on bridges and trestles, water columns, oil columns, block signals, cattle guards and cattle chutes, or portions thereof, four feet or less above top of rail may have clearances decreased to the extent defined by a line extending diagonally upward from a point level with the top of rail and five feet distant laterally from centerline of track to a point four feet above top of rail and eight feet distant laterally from centerline of track: *Provided*, That the minimum clearance for hand rails and water barrels shall be seven feet six inches and the minimum clearance for fences of cattle guards shall be six feet nine inches.

Note: Unless previously approved, the clearances authorized in this subsection, except as provided for hand rails and water barrels, are not permitted on through bridges where the work of trainmen or yardmen requires them to be upon the decks of such bridges for the purpose of coupling or uncoupling cars in the performance of switching service on a switching lead.

(6) Side clearance—Cattle guards and cattle chutes. (See subsection (5) above.)
(7) Side clearance—Engine house and car repair shop doors. 7' 6"
(8) Side clearance—Hand rails on bridges and trestles (see subsection (5)).
(9) Side clearance—Interlocking mechanism, switch boxes, etc. 3' 0"

Switch boxes, switch operating mechanism necessary for the control and operation of signals and interlockers projecting four inches or less above top of rail.

(10) Side clearance—Mail cranes and train order stands when not in operative position. 8' 6"
(11) Side clearance—Oil columns (see subsection (5)). 8' 0"
(12) Side clearance—Poles supporting trolley contact. 8' 3"

Conductors supplying motive power to track affected—of bracket construction.

(13) Side clearance—Poles other than trolley poles. 8' 6"
(14) Side clearance—Signals and switch stands 3' high or less when located between tracks where not practicable to provide clearances otherwise prescribed in this order 6' 0"
(15) Side clearance—Signals and switch stands other than above 8' 0"
(16) Side clearance—Tunnels (see subsection (4)). 8' 0"
(17) Side clearance—Water barrels on bridges (see subsection (5)).
(18) Side clearance—Water columns (see subsection (5)). 8' 0"
(19) Side clearances on curved track.

Note: Side clearances on all structures adjacent to curved track shall be increased as necessary to give the equivalent of tangent track clearances.

(20) Side clearances—Material or merchandise adjacent to tracks. 8' 6"

Note: No merchandise, material or other articles shall be placed or stored on ground or platforms adjacent to any track at a distance less than eight feet six inches from the centerline of track, except in cases of maintenance or emergency when such material is to be used within a reasonable period of time or where local conditions make compliance with this note impossible.

[Section 3, filed 4/3/61.]

WAC 296-28-030 Track clearances.

(1) Track clearances—In general 14' 0"

The minimum distance between the centerlines of parallel standard gauge railroad tracks, which are used or proposed to be used for transporting cars, engines, motors or like equipment, shall be fourteen feet, except as hereinafter prescribed.

(2) Track clearances—Main and subsidiary tracks 15' 0"

The centerline of any standard gauge track, except a main track or a passing track, parallel and adjacent to a main track or a passing track, shall be at least fifteen

feet from the centerline of such main track or passing track: *Provided, however,* That where a passing track is adjacent to and at least fifteen feet distant from the main track, any other track may be constructed adjacent to such passing track with clearance prescribed in subsection (1) above.

(3) Track clearances—Parallel team, house or industry tracks. 13' 0"

Minimum clearances between centerlines of parallel team, house or industry tracks shall be thirteen feet.

(4) Track clearances—Parallel ladder or ladder and other track 20' 0"

The centerline of any standard gauge ladder track, constructed parallel to any other track, shall have a clearance of not less that twenty feet from the centerline of such other track.

(5) Track clearances—Existing tracks

Note: Existing tracks may be extended at clearances lawfully prescribed prior to the effective date of this order.

[Section 4, filed 4/3/61.]

WAC 296-28-035 Marking of cars. (1) Cars exceeding 15' 6" in height.

Each car of a height exceeding fifteen feet six inches from top of rail to top of running board, the movement of which is hereby authorized, shall be marked, stenciled or placarded, and such markings maintained in a legible condition to read:

"This car
EXCESS
HEIGHT"

The words "EXCESS HEIGHT" to occupy the greater portion of a rectangular space 7" x 10" enclosed within a 3/4" solid border. The markings required shall be made permanent on owned cars as soon as practicable. Lettering and border of signs shall be of colors contrasting to that of the car body. All such required marking and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners.

(2) Cars exceeding 10' 10" in width.

Each car of a width exceeding ten feet ten inches, the movement of which is hereby authorized, shall be marked, stenciled or placarded, and such markings maintained in a legible condition to read:

"This car
EXCESS
WIDTH"

The words "EXCESS WIDTH" to occupy the greater portion of a rectangular space 7" x 10" enclosed within 3/4" solid border. The markings required shall be made permanent on owned cars as soon as practicable. Lettering and border of signs shall be of colors contrasting to that of the car body. All such required marking and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners.

[Section 5, filed 4/3/61.]

WAC 296-28-040 Operation of excess dimension loads. (1) Cars containing lading in excess of 15' 6" high and/or 5' 5" from centerline of car.

Each open top car containing lading of a height exceeding fifteen feet six inches above top of rail, or which extends laterally more than five feet five inches from the centerline of the car, the movement of which is hereby authorized, shall be marked, stenciled or placarded, and such markings maintained in a legible condition to read:

"This car EXCESS HEIGHT" or "This car EXCESS WIDTH"

The words "EXCESS HEIGHT" or "EXCESS WIDTH" to occupy the greater portion of a space 7" x 10" enclosed within a 3/4" solid border. Letters and border to be of contrasting colors. All such required markings and placarding shall be placed on the side adjacent to the ladder or handholds near the floor line of the car at each of the four corners where practicable, and in addition one each of such signs shall be placed on each side of the load in a conspicuous position.

(2) Cars containing lading which extends laterally in excess of 5' 5".

The movement of open top cars containing lading which extends laterally in excess of five feet five inches is hereby authorized only if the lading is of such a nature that it cannot practically be reduced in dimensions.

(3) Lading higher than 15' 6" or extending laterally more than 5' 5 1/2".

(a) The movement of all open top cars having lading in excess of fifteen feet six inches in height, or which extends laterally in excess of five feet five and one-half inches from centerline of car will be authorized by written notice stating the total number of such cars and advising that no member of the train crew is required to ride on top of such high car or the side of any such wide car.

(b) A written notice shall be delivered to every train containing any car, the lading of which extends laterally in excess of 5' 5 1/2" from the centerline of the car or in excess of 15' 6" in height above top of rails, informing the crew of the train that the train includes such car or cars, stating the total number thereof and advising that no member of the train crew is required to ride on the side of any such wide car or top of any such high car.

(4) Notice to yard supervisors.

Yard supervisors shall be given notification sufficiently in advance of the arrival of such wide loads as described in subsection (3)(a) above as to enable them to take necessary precautions to safeguard employees in yard.

(5) Loads which cannot be passed over by employees.

Open top cars containing lading having an overall height in excess of fifteen feet six inches above top of rail, if otherwise in compliance with these requirements, and the nature of which precludes the possibility of employees passing over the cars, are exempt from the provisions of subsections (3)(a), (3)(b) and (4), but written notice must be given to all members of train crew informing them of the presence of such loads.

(6) Exemptions.

The common carrier railroads are hereby authorized to move excess height loads and width loads, as described in subsection (1) over roads or portions thereof, without complying with the provisions of WAC 296-28-040, provided that clearances equivalent to the minimum herein prescribed for cars having a height of fifteen feet six inches and width of ten feet ten inches are maintained.

[Section 6, filed 4/3/61.]

WAC 296-28-045 Narrow gauge railroads transporting freight cars. (1) Overhead and side clearances.

For the operation of equipment on narrow gauge tracks, the minimum overhead clearance shall provide a distance above the top of the highest car operated not less than that provided in this order for cars fifteen feet six inches in height operated on standard gauge tracks; the side clearances and distances between centerlines of tracks shall provide a distance from the sides of, or between the widest cars operated not less than those distances herein provided for cars ten feet ten inches in width operated on standard gauge tracks.

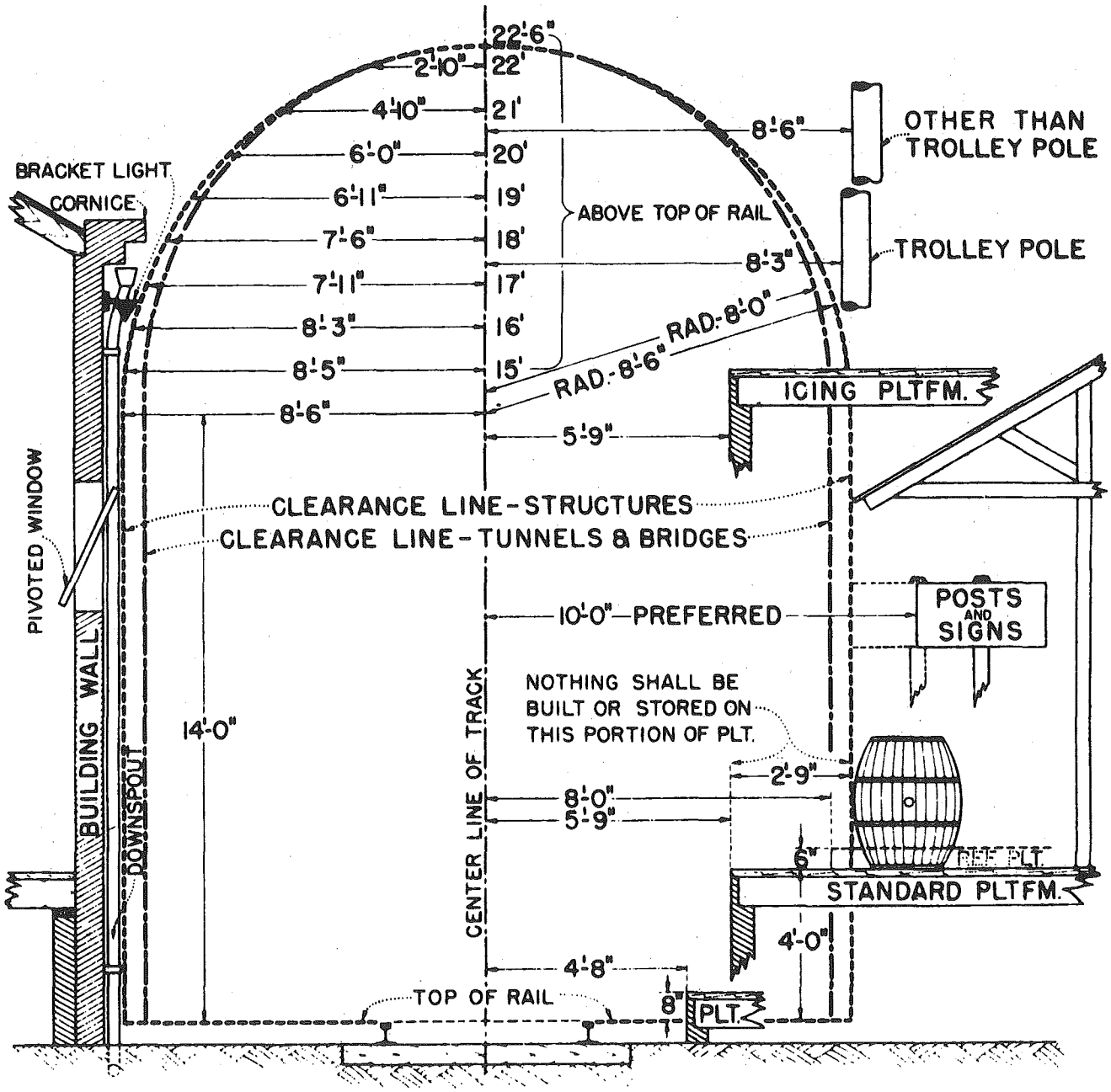
(2) All other requirements of this order where applicable shall be observed by narrow gauge railroads.

[Section 7, filed 4/3/61.]

WAC 296-28-050 Illustrations.

(1)

TYPICAL CLEARANCE
OF STRUCTURES FROM RAILROAD TRACKS

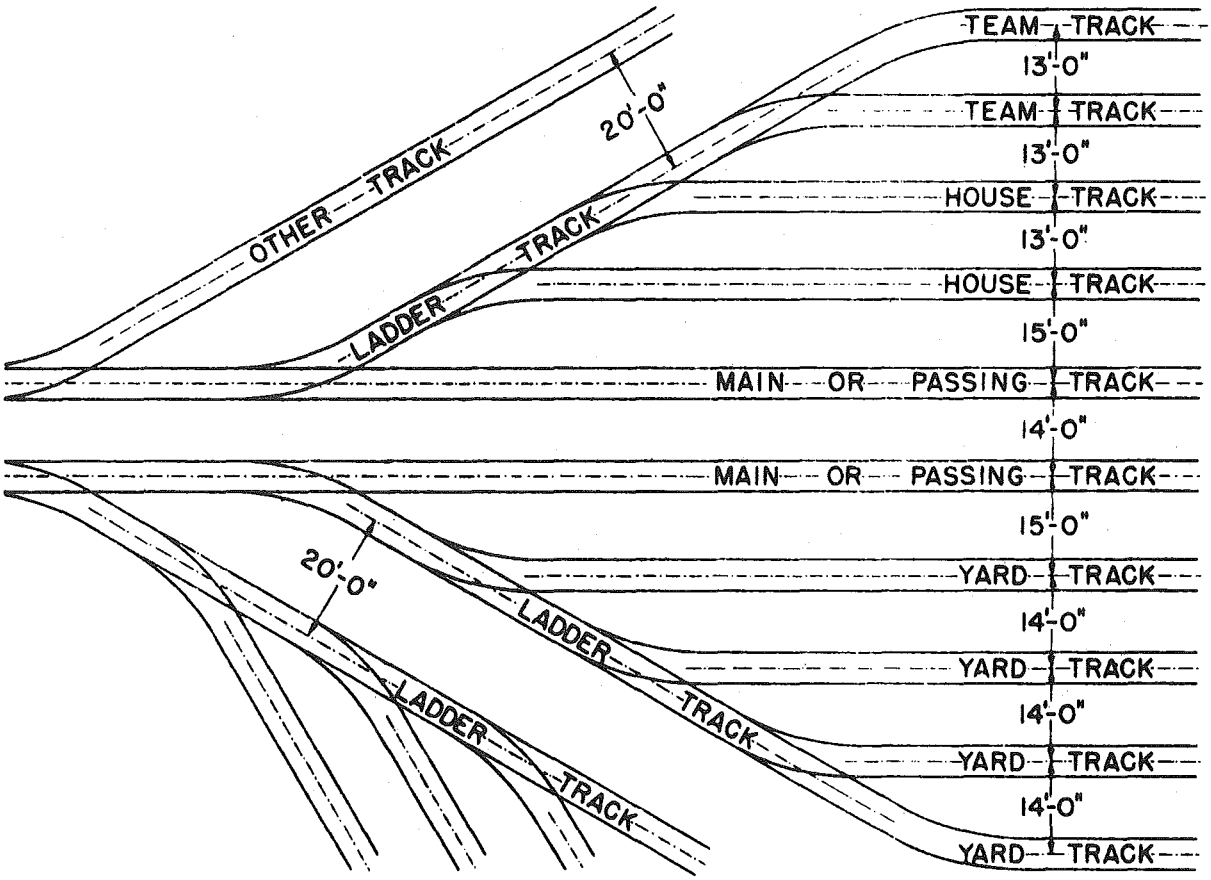


NOTES

OVERHEAD WIRE CLEARANCES SHALL CONFORM TO THE ELECTRICAL AND COMMUNICATION WORKERS SAFETY RULES OF THE STATE OF WASHINGTON

SIDE CLEARANCES ON ALL STRUCTURES ADJACENT TO CURVED TRACK SHALL BE INCREASED TO GIVE THE EQUIVALENT OF TANGENT TRACK CLEARANCES

(2) TYPICAL TRACK SPACING



NOTE

EXISTING TRACKS MAY BE EXTENDED AT CLEARANCES LAWFULLY PRESCRIBED PRIOR TO THE EFFECTIVE DATE OF THIS ORDER.

CLASS OF HIGHWAY

	CLASS I			CLASS II			CLASS III			CLASS IV			CLASS V			CLASS VI		CLASS VII			FRONTAGE ROADS (c)		
																				CLASS IF	CLASS 2F	CLASS 3F
TERRAIN	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL	ROLLING	MOUNT.	LEVEL & ROLLING	MOUNT.					
ADT IN 20 YEARS	OVER 10,000	OVER 5,000	OVER 2,000	10,000 MAX	5,000 MAX	2,000 MAX	Refer to Design Capacity Table			Refer to Design Capacity Table			600 TO 200			UNDER 200				1,000 TO 600	600 TO 150	UNDER 100
DHV IN 20 YEARS	OVER 1,700	OVER 750	OVER 300	1,700 MAX	750 MAX	300 MAX							90 TO 30			UNDER 30				150 TO 30	90 TO 15	UNDER 15
TRUCK ADT IN 20 YEARS							OVER 600	OVER 450	OVER 300	UNDER 600	UNDER 450	UNDER 300										
SEPARATION OF ALL CROSS TRAFFIC REQUIRED	YES			Separate Where Cross Traffic Warrents			Separate Where Cross Traffic Warrents			NO			NO			NO				NO		
CONTROL OF ACCESS REQUIRED	FULL			According to Master Plan			According to Master Plan			According to Master Plan			NO			NO				NO		
NUMBER OF TRAFFIC LANES	4 or more (Divided)			4 (Divided)			2			2			2			2				2	2	1
DESIGN SPEED M.P.H	70	60	50	70	60	50	70	60	50	70	60	50	60	50	40	35	25			40	30	25
CURVATURE Desirable	3°	4°	6°	3°	4°	6°	3°	4°	6°	3°	4°	6°	4°	6°	9°-30'	13°	13°			9°-30'	13°	20°
CURVATURE Maximum	4°	5°	8°	4°	5°	8°	4°	5°	8°	4°	5°	8°	5°	8°	13°	18°	30°			13°	20°	56°
GRADIENT Desirable	2.5%	3%	4%	2.5%	3%	4%	2.5%	3%	4%	2.5%	4%	5%	3%	5%	6%	7%	7%			6%	7%	7%
GRADIENT Maximum	3%	5%	5%	3%	5%	5%	3%	5%	5%	3%	5%	6%	5%	6%	7%	10%	10%			7%	10%	10%
SIGHT DISTANCE Min Safe Stopping	600'	475'	350'	600'	475'	350'	600'	475'	350'	600'	475'	350'	475'	350'	275'	225'	150'			275'	200'	150'
SIGHT DISTANCE Min Safe Passing	—	—	—	—	—	—	2,300'	2,000'	1,700'	2,300'	2,000'	1,700'	2,000'	1,700'	1,300'	1,000'	600'			—	—	—
TRAFFIC LANE WIDTH	12'			12'			12'			11'			10'			9'				10'	9'	12'
SHOULDER WIDTH	10'		10'(a)	10'		10'(a)	10'		10'(a)	8'		8'(a)	4'			3'				4	3'	3'
MIN. MEDIAN WIDTH	15'		4'	15'		4'																
PAVEMENT TYPE (b)	High			High			High			Intermediate or (High)			Low or (Intermediate)			Low or (None)				Low or (Intermediate)	Low or (None)	Low or (None)
MIN. RIGHT OF WAY WIDTH	61' FROM OUTER EDGE OF PAVEMENT 100' MIN			61' FROM OUTER EDGE OF PAVEMENT 100' MIN			150'			150'			100'			60'				60'	60'	40'
ILLUMINATION	As Required			As Required			As Required at Intersections															
STRUCTURES (Minimum Standards)																						
Load Capacity	H20 - S16			H20 - S16			H20 - S16			H15 - S12			H15 - S12			H15 - S12				H15 - S12	H15	H15
Vertical Clearance	14'-6" Minimum									15'-0" Desirable												
Bridge Width (0 to 80' Long)	69'			69'			42'			36'			26'			24'				26'	24'	18'
Bridge Width (Over 80' Long)	56'			56'			28'			26'			26'			24'				26'	24'	18'

NOTES:

(a) Shoulder width may be reduced to 4 feet for short sections in heavy rock excavation.

(b) Definitions of Pavement Types:
"High - Cem. Conc. - 6" Min. on Adequate Base
Asph. Conc. - 3" Min. on Cem. Treated Base
Inter. - Asph. Conc. - Under 3" / Bit. Penetr. Mac. - 1" Min. / Road Mix. - 1" Min. } On Adequate Base
Low - L.B.S.T. - 1/4" Min.
*Exceptions are possible in arid areas.
Types in ( ) should be secondary choice.

(c) Frontage Roads: For volumes over 1,000 ADT, use Class III Highway for 50 mph design speed.
Interstate Routes: Interstate Standards will apply.

DESIGN CAPACITY TABLE

TERRAIN	PER CENT SIGHT DIST. RESTRICTED	MAXIMUM DHV FOR CLASS OF HIGHWAY SHOWN													
		0% TRUCKS		5% TRUCKS		10% TRUCKS		15% TRUCKS		20% TRUCKS		25% TRUCKS		30% TRUCKS	
		CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV	CLASS III	CLASS IV
LEVEL	0	900	770	840	720	780	670	740	630	690	590	680	560	620	530
	20	860	740	800	690	750	640	700	610	660	570	630	540	590	510
	40	800	690	740	640	700	600	650	560	610	530	580	500	550	480
	60	720	620	670	580	630	540	590	510	550	480	530	450	500	430
ROLLING	0	900	770	750	640	640	550	560	480	500	430	450	390	410	350
	20	860	740	720	620	610	530	510	460	480	410	430	370	390	340
	40	800	690	670	580	570	490	500	430	450	380	400	250	360	310
	60	720	620	600	520	510	440	450	390	400	340	360	310	330	280
MOUNT.	0	900	770	670	530	470	410	380	330	320	280	280	240	240	210
	20	860	740	590	510	450	390	370	320	310	260	270	230	230	200
	40	800	690	550	480	420	360	340	290	290	250	250	210	220	190
	60	720	620	500	430	380	330	310	260	260	220	220	190	190	170

NOTES ON DESIGN CAPACITY TABLE:

Procedure in use of table.

1. Determine. (a) type of terrain, (b) % of length that sight distance is restricted to less than 1500 feet, (c) % of trucks, (d) DHV estimated for 20 years hence.

2. Select the class of highway required from the table using the above four conditions.

3. When the truck ADT requires a higher class of highway than the findings from this table indicate, the truck ADT shall govern

Ratio of ADT to DHV varies with every case. DHV generally averages 10 % to 15 % of ADT.

Consideration should be given to climbing lanes as compared with going to a higher class of highway

Reference: Highway Capacity Manual.

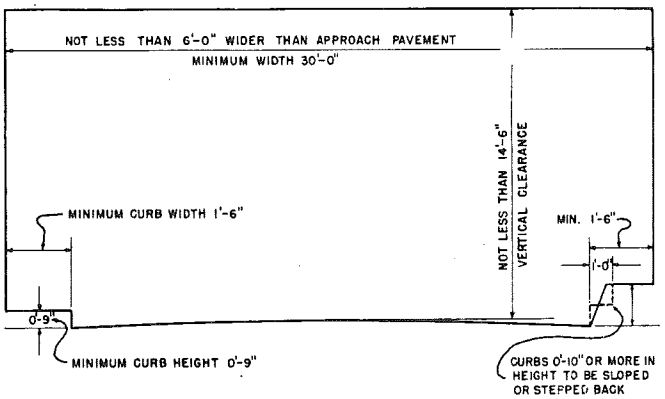
STANDARD
GEOMETRIC DESIGN STANDARDS
FOR RURAL STATE HIGHWAYS
WASHINGTON STATE HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS
OLYMPIA, WASHINGTON

APPROVED FEB 1, 1955

W. A. Bugge

(4)

CLEARANCE DIAGRAM FOR UNDERPASSES
TWO-WAY HIGHWAY TRAFFIC



REFERENCE:

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES — THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS.

[Illustrations, filed 4/3/61.]

Chapter 296-30 WAC
RULES FOR THE ADMINISTRATION OF THE CRIME VICTIM COMPENSATION PROGRAM

WAC

296-30-010	Definitions.
296-30-020	Vehicular assault and vehicular homicide.
296-30-050	Distribution of third party recoveries.
296-30-060	Requirement to report criminal acts.
296-30-080	Counseling for sexual assault.
296-30-081	Acceptance of rules and fees.
296-30-120	Factors considered in order to modify debt due department.
296-30-130	Lump sum benefits.
296-30-170	Payment for medical examination of victims of sexual assault.
296-30-180	Payment of benefits to prevent unjust enrichment.
296-30-900	Effective date of amendatory acts.

WAC 296-30-010 Definitions. Whenever used in these rules, the following words mean:

(1) "Innocent victim" means any person whose injury was not the direct, proximate result of his or her consenting to, provoking, or inciting the criminal act that resulted in the injury.

(2) "Bodily injury" means any harmful or offensive touching, and includes severe emotional distress where no touching takes place when:

(a) Claimant is not the object of the criminal act and:

(i) The distress is intentionally or recklessly inflicted;

(ii) The distress is inflicted by extreme or outrageous conduct;

(iii) The claimant has a reasonable apprehension of imminent bodily harm;

(iv) The claimant is in the immediate vicinity of the criminal act at the time the criminal act takes place.

(b) Claimant is the victim of the criminal act and:

(i) The distress is intentionally inflicted;

(ii) The distress is inflicted by outrageous or extreme conduct; and

(iii) The claimant had a reasonable apprehension of imminent bodily harm.

(3) "Private insurance" means sources of recompense available by contract, such as life or disability insurance.

(4) "Public insurance" means any state or federal statutory welfare and insurance plan that compensates victims or their beneficiaries as a result of the claimed injury or death. This does not include state, federal, or private deferred income retirement plans.

(5) The test used to define "the result of" as used in RCW 7.68.070 (3)(a) and (b) is two pronged. First, it must be determined that cause in fact exists, and second, it must then be determined that proximate cause exists.

(a) Cause in fact exists if "but for" the acts of the victim the crime that produced the injury would not have occurred.

(b) Proximate cause exists if, once cause in fact is found, it is determined that the acts of the victim:

(i) Resulted in a foreseeable injury to the victim;

(ii) Played a substantial role in the injury; and

(iii) Were the direct cause of the injury.

(6) "Institutions maintained and operated by department of social and health services" means those institutions in which the department of social and health services assumes responsibility for medical coverage of the institution's residents.

(7) "Reasonable cooperation" generally exists when the claimant is:

(a) Willing to talk to police and give information to aid in the investigation; and

(b) Willing to assist in the prosecution of the alleged criminal.

(8) A person is "unjustly enriched" within the meaning of RCW 7.68.070(15) when it would be deficient in justice and fairness, or inequitable, to allow that person to obtain, or have control of or access to, benefits or compensation paid as a result of an injury to a victim of crime.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-010, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-010, filed 1/15/85.]

WAC 296-30-020 Vehicular assault and vehicular homicide. Chapter 7.68 RCW shall cover those people killed or injured as a result of a vehicular homicide or vehicular assault that occurred after July 24, 1983 if there has been a conviction for the vehicular assault or vehicular homicide. Eligibility occurs when the claimant's injury results in the assailant's conviction for vehicular assault or vehicular homicide, or when the claimant's injury is a direct result of the collision that led to the vehicular assault or vehicular homicide conviction. The claimant's injury need not be the one that led to the conviction.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-020, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-020, filed 1/15/85.]

WAC 296-30-050 Distribution of third party recoveries. (1) Before July, 1977. Any claimant who receives crime victim's benefits is required to reimburse fully the department for all benefits paid to the claimant under chapter 7.68 RCW if the claimant recovers damages from the person or persons who committed the criminal act. The reimbursement is limited to the amount recovered by the victim.

(2) After July, 1977 and before April 1, 1980. Any claimant who receives crime victim's benefits is required to reimburse fully the department for all benefits paid to the claimant under chapter 7.68 RCW if the claimant recovers damages from any liable party. The reimbursement is limited to that amount recovered by the victim.

(3) An injury or death that occurred on or after April 1, 1980, for which recovery was made before July 24, 1983. This amendment incorporated the industrial insurance third party recovery statutes RCW 51.24.050 through 51.24.100 into chapter 7.68 RCW. The amendment changed the department's entitlement to reimbursement. For those victims injured or killed on or after April 1, 1980, and for which any recovery was made before July 24, 1983, disbursement of an award or settlement is as follows:

(a) Reasonable attorney's fees.

(b) Victim receives 25% of the balance.

(c) The department shall receive the balance to the extent necessary to reimburse the department for benefits paid.

(d) Any remaining balance is paid to the victim.

(e) If any remaining balance is paid to the victim, no further crime victim benefits will be paid to the victim until the amount of benefits she or he continued to be eligible for equals the remaining balance paid at the time of settlement or award.

(4) Recoveries made on or after July 24, 1983. This subsection applies to all claimants who receive an award or settlement from a liable third party on or after July 24, 1983. These awards shall be disbursed as follows:

(a) Costs and reasonable attorney's fees paid proportionately by the victim and the department.

(b) Victim then receives 25% of the balance.

(c) Department receives the balance to the extent necessary to reimburse the department for its lien minus its share of attorney's fees.

(d) Any remaining balance goes to the victim.

(e) The department may compromise its lien for injuries that were sustained on or after April 1, 1980.

(5) Steps for determining proportionate attorney's fees:

(a) Determine the amount of the settlement or award obtained by the claimant.

(b) Determine attorney's fees and costs.

(c) For an open claim, determine the amount of the department's lien at the time of settlement or award. If the claim is closed at the time of the recovery, determine the claimant's full entitlement from the department.

(6) Calculate what percent of the total recovery equals the department's lien for open cases, and the claimant's entitlement for closed claims. This percent is the department's proportionate share.

Ex. in a nondeficiency judgment

$ 1,000	Gross recovery
$ 200	Attorney fees
$ 100	Entitlement or claim costs
$ 20	Department's proportionate share of attorney's fees and costs. The $100 claim costs equals 10% of the total recovery. Thus, the department's proportionate share of attorney's fees are equal to 10% of $200 or $20

Ex. in deficiency judgments/recoveries

$ 1,000	Gross recovery
$ 200	Attorney fees
$ 2,000	Claim costs
$ 1,000	
$ –200	Attorney fees
$ 800	Claimant receives 25% of this figure = 200
$ –200	Claimant 25% share
$ 600	Balance remaining goes to the department and is used to determine if settlement/judgment is deficient. If this balance is deficient, as it is here, this figure is used to calculate the department's proportionate share of attorney's fees and costs.
60%	Department percent of attorney fees ($6.00 = 60% of $1,000 recovery)
$ 120	Department's share of attorney fees
$ +200	Claimant's 25% share
$ 320	Claimant's total recovery
$ 600	Balance
$ –120	Attorney fees, department
$ 480	Department's recovery

(7) Once the claim is closed, the department shall reexamine its proportionate share. If the claimant's final entitlement is greater than the amount of the department's lien at the time of recovery, the department shall reimburse the claimant for the department's increased percentage of the attorney's fees and costs.

Ex.:

$ 1,000	Recovery.
$ 200	Attorney's fees and costs.
$ 100	Department's lien at time of recovery.
$ 20	Attorney's fees and costs paid at time of recovery.
$ 500	Claimant's total entitlement (50% of total recovery).

$ 100	Department's full proportionate share of attorney's fees and costs (50%, that amount determined by the claimant's entitlement).
$ 80	The amount that the department must reimburse the claimant for attorney's fees and costs.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-050, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-050, filed 1/15/85.]

WAC 296-30-060 Requirement to report criminal acts. (1) The following are examples under which the seventy-two hour reporting requirement in RCW 7.68.060(2) may be tolled:

(a) Unconsciousness or coma of victim.

(b) Youth of victim (because of age the victim is unaware that a crime has been committed against her).

(c) Rape trauma syndrome.

(d) A report of an assault against a child made to children's protective services when the report is made within seventy-two hours of when it reasonably could have been made.

(2) This list is not and should not be considered exhaustive but is for illustrative purposes.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-060, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-060, filed 1/15/85.]

WAC 296-30-080 Counseling for sexual assault. (1) Pursuant to RCW 7.68.070(12), the department shall pay for counseling for victims of sexual assault and, when appropriate, for members of a victim's immediate family. An immediate family member shall be defined as the victim's parents, spouse, child(ren), siblings, grandparents, and those members of the same household who have assumed the rights and duties commonly associated with a family and who hold themselves out as a family unit.

(2) Counseling for the above defined family members is appropriate when:

(a) The counseling is for the spouse, child, parent, or sibling of the victim who suffers psychological trauma as a result of the sexual assault; or

(b) The family member and victim live in the same household and the family member suffers psychological trauma as a result of the sexual assault; or

(c) The family member sees the assault; or

(d) Counseling of the family member will aid in the victim's recovery.

(3) Evaluation and counseling must be done by a counselor with a MSW or equivalent degree, a PhD psychologist, or a psychiatrist. The fee for an MSW or equivalent degree for 45-50 minutes with report . . . . 40 units.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-080, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-080, filed 1/15/85.]

WAC 296-30-081 Acceptance of rules and fees. Providing medical or counseling services to an injured crime victim whose claim for crime victims benefits has been accepted by the department constitutes acceptance of the department's medical aid rules and compliance with its rules and fees. Maximum allowable fees shall be those fees contained in WAC 296-21-010 through 296-23-9408 and in WAC 296-30-080 less any available benefits of public or private collateral resources.

An injured victim shall not be billed for his or her accepted injury. The department shall be billed only after available benefits of public or private insurance have been determined.

If the medical provider has billed the injured victim and is later notified that the department has accepted the victim's claim, the provider shall refund to the injured victim any amounts paid that are in excess of the amounts that the victim is entitled to from public or private insurers, and bill the department for services rendered at fee schedule rates if such rates are in excess of the public or private insurance entitlements.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-081, filed 12/11/85.]

WAC 296-30-120 Factors considered in order to modify debt due department. RCW 7.68.120 allows the department in the interest of justice or rehabilitation, to waive, modify, or adjust the debt owed to the department by any person found to have committed the criminal act for which crime victim benefits were paid. To determine whether or not the debt should be modified, waived or adjusted, the department shall consider the following factors:

(1) The gravity of the offense;

(2) Extent of injury to victim;

(3) Type of crime;

(4) circumstances surrounding the criminal act;

(5) The assailant's attempts at rehabilitation:

(a) Rehabilitation program involvement;

(b) Employment efforts;

(c) Community involvement;

(6) Ability to pay:

(a) Income;

(b) Necessary expenses;

(c) Number and ages of dependents;

(7) Sentence imposed by the court.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-120, filed 12/11/85.]

WAC 296-30-130 Lump sum benefits. (1) Lump sum benefits paid to the survivor(s) of an unemployed victim shall be paid on a monthly basis if the survivor(s) is entitled to private or public death benefits. The death benefit payments shall be deducted each month from the crime victim's death benefits. Crime victim's benefit payments shall continue until the combined public or private death benefits and the crime victim's death benefits equal the total amount that the survivor(s) is eligible for under chapter 7.68 RCW.

(2) The amount of the monthly payments is based on the state's average monthly wage and are determined by the percentages established in RCW 51.32.050.

(3) This lump sum payment shall be adjusted upward by a factor of 8% to reflect the present and future value of the money.

(4) The survivor(s) of an employed victim are entitled to a maximum of ten thousand dollars in death benefits. These benefits shall be paid in the same manner as the benefits paid to the survivor(s) of an unemployed victim except that the monthly rate shall be determined by the deceased's regular rate of pay.

(5) This procedure was adopted to ensure equal treatment of survivor(s) in like circumstances.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-130, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-130, filed 1/15/85.]

WAC 296-30-170 Payment for medical examination of victims of sexual assault. A victim of sexual assault is entitled to payment for the costs of a medical examination under RCW 7.68.170 regardless of whether she or he qualifies for benefits under chapter 7.68 RCW, if the hospital or emergency medical facility proves to the department that:

(1) The care was provided; and

(2) The examination was performed at least in part to gather medical evidence for possible prosecution of the assailant.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-170, filed 12/11/85; 85-03-060 (Order 85-3), § 296-30-170, filed 1/15/85.]

WAC 296-30-180 Payment of benefits to prevent unjust enrichment. RCW 7.68.070(15) prohibits the department from paying any benefits or compensation to the person who caused a crime victims injuries, or to any other person if that person would be unjustly enriched by the benefits. In some situations, as when a child is injured by a parent or a spouse by the other spouse, there is a danger that the injuring person will divert to her own use the benefits or compensation intended for the victim.

To prevent this possibility, the department may on its own motion or the motion of the victim or his or her guardian, request that the victim or other responsible adult establish (1) a trust for which the trustee shall be a neutral third person; or (2) a savings or checking account for which a neutral third person must cosign all withdrawals or checks. Crime victims compensation benefits shall then be deposited in the established account.

The department shall continue to pay medical providers directly.

[Statutory Authority: Chapter 7.68 RCW. 86-01-028 (Order 85-37), § 296-30-180, filed 12/11/85.]

WAC 296-30-900 Effective date of amendatory acts. (1) The statute in effect at the time the criminally caused injury occurred is the controlling law.

[Statutory Authority: Chapter 7.68 RCW. 85-03-060 (Order 85-3), § 296-30-900, filed 1/15/85.]

Chapter 296-32 WAC
SAFETY STANDARDS FOR TELECOMMUNICATIONS

WAC

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296-32-001 Foreword—Effective date. [Foreword, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-010 Statements of fact—Construction of rules. [Rules (part), effective 4/1/66; Regulations 1.3, 1.4, 1.7, 1.8, 1.9, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-011 Procedure for settling controversy. [Rules (part), effective 4/1/66; Regulation 1.6, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-020 Causes of accident. [Rules (part), effective 4/1/66; Regulation 1.10, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-030 Causes of accident—Safety. [Rules (part), effective 4/1/66; Regulation 1.11, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-040 Definitions. [Definitions, effective 4/1/66; Regulations 1.12—1.25, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-050 Employer's responsibility. [Rules (part), effective 4/1/66; Regulations 2.1—2.11, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-060 Foreman's responsibility. [Rules (part), effective 4/1/66; Regulations 2.12—2.23, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-070 Employee's responsibility. [Rules (part), effective 4/1/66; Regulations 2.24—2.31, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-080 First-aid. [Rules (part), effective 4/1/66; Regulations 3.1—3.4, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-090 Industrial hygiene. [Rules (part), effective 4/1/66; Regulations 3.5—3.7, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-094 Overhead work. [Rules (part), effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-098 Molten solder handling. [Rules (part), effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-100 Aerial plant. [§ VI, Rules 6.010—6.100, effective 4/1/66; Regulations 4.1—4.15, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-110 Underground plant. [§ VII, Rules 7.010—7.120, effective 4/1/66; Regulations 5.1—5.12, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-120 Central office plant. [§ IV, Rules 4.010—4.060, effective 4/1/66; Regulations 6.1—6.7, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-130 Tools and protective devices. [§ II, Rules 2.010—2.460, effective 4/1/66; Regulations 7.1—7.50, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-140 Motor vehicles, work equipment and transportation. [§ III, Rules 3.010—3.160, effective 4/1/66; Regulations 8.1—8.14, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-150 Power exposures. [§ VIII, Rules 8.010—8.200, effective 4/1/66; Regulations 9.1—9.20, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-160 General safety requirements. [§ I, Rules 1.010—1.120, effective 4/1/66; Rules 10.2—10.7, 10.10, 10.11, 10.14, 10.15, 10.16, 10.17, filed 3/23/60.] Repealed by Order 77-12, filed 7/11/77.

296-32-170 Manlift equipment. [§ V, Rules 5.010—5.090, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

296-32-180 Electronic communication equipment. [§ IX, Rules 9.010—9.120, effective 4/1/66.] Repealed by Order 77-12, filed 7/11/77.

WAC 296-32-200 Scope and application. (1) This chapter sets forth safety and health standards that apply to the work conditions, practices, means, methods, operations, installations and processes performed at telecommunications centers and at telecommunications field installations, which are located outdoors or in building spaces used for such field installations. "Center" work includes the installation, operation, maintenance, rearrangement, and removal of communications equipment and other associated equipment in telecommunications switching centers. "Field" work includes the installation, operation, maintenance, rearrangement, and removal of conductors and other equipment used for signal or communication service, and of their supporting or containing structures, overhead or underground, on public or private rights of way, including buildings or other structures.

(2) These standards do not apply:

(a) To construction work, as defined in chapter 296-155 WAC, nor

(b) To installations under the exclusive control of electric utilities used for the purpose of communications or metering, or for generation, control, transformation, transmission, and distribution of electric energy, which are located in buildings used exclusively by the electric utilities for such purposes, or located outdoors on property owned or leased by the electric utilities or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(3) Operations or conditions not specifically covered by this chapter are subject to all the applicable standards contained in chapter 296-24 WAC, general safety and health standards. Operations which involve construction work, as defined in chapter 296-155 WAC are subject to all the applicable standards contained in chapter 296-155 WAC, safety standards for construction work.

(4) This standard shall augment the Washington state general safety and health standards, general occupational health standards, electrical workers safety rules, and any other standards which are applicable to all industries governed by chapter 80, Laws of 1973, Washington Industrial Safety and Health Act. In the event of any conflict between any portion of this chapter and any portion of any of the general application standards, the provisions of this chapter 296-32 WAC, shall apply.

(5) In exceptional cases where compliance with specific provisions of this chapter can only be accomplished to the serious detriment and disadvantage of an operation, variance from the requirement may be permitted by the director of the department of labor and industries after receipt of application for variance which meets the requirements of WAC 296-24-010, general safety and health standards.

[Order 76-38, § 296-32-200, filed 12/30/76; Order 75-41, § 296-32-200, filed 12/19/75.]

WAC 296-32-210 Definitions. (1) The terms used in these standards shall be interpreted in the most commonly accepted sense consistent with the communications industry. The words "shall" and "must," are used to indicate the provisions which are mandatory.

(2) "Aerial lifts." Aerial lifts include the following types of vehicle-mounted aerial devices used to elevate personnel to jobsites above ground:

(a) Extensible boom platforms,

(b) Aerial ladders,

(c) Articulating boom platforms,

(d) Vertical towers,

(e) A combination of any of the above defined in ANSI A92.2-1969. These devices are made of metal, wood, fiberglass, reinforced plastic (FRP), or other material; are powered or manually operated and are deemed to be aerial lifts whether or not they are capable of rotating above a substantially vertical axis.

(3) "Aerial splicing platform." This consists of a platform, approximately 3 feet x 4 feet, used to perform aerial cable work. It is furnished with fiber or synthetic ropes for supporting the platform from aerial strand, detachable guy ropes for anchoring it, and a device for raising and lowering it with a handline.

(4) "Aerial tent." A small tent usually constructed of vinyl coated canvas which is usually supported by light metal or plastic tubing. It is designed to protect employees in inclement weather while working on ladders, aerial splicing platforms, or aerial devices.

(5) "Alive or live (energized)." Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of the earth in the vicinity. The term "live" is sometimes used in the place of the term "current-carrying," where the intent is clear, to avoid repetition of the longer term.

(6) "Barricade." A physical obstruction such as tapes, cones, or "A" frame type wood and/or metal structure intended to warn and limit access to a work area.

(7) "Barrier." A physical obstruction which is intended to prevent contact with energized lines or equipment, or to prevent unauthorized access to work area.

(8) "Bond." An electrical connection from one conductive element to another for the purpose of minimizing potential differences or providing suitable conductivity for fault current or for mitigation of leakage current and electrolytic action.

(9) "Cable." A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).

(10) "Cable sheath." A protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

(11) "Circuit." A conductor or system of conductors through which an electric current is intended to flow.

(12) "Clearance."

(a) The certification by the proper authority that a specified line or piece of equipment is de-energized; that the proper precautionary measures have been taken and that the line or equipment is being turned over to the workers.

(b) Separation or protection by the use of protective devices to prevent accidental contact by persons or objects on approach to a point of danger.

(13) "Climbing space." The vertical space reserved along the side of poles or structures to permit ready access for linemen to equipment and conductors located on poles or structures.

(14) "Communication lines." The conductors and their supporting or containing structures for telephone, telegraph, railroad signal, data, clock, fire, police-alarm, community television antenna and other systems which are used for public or private signal or communication service, and which operate at potentials not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When communications lines operate at less than 150 volts to ground, no limit is placed on the capacity of the system. Specifically designed communications cables may include communication circuits not complying with the preceding limitations, where such circuits are also used incidentally to supply power to communication equipment.

(15) "Communication plant." The conductors and their associated equipment required to provide public or private signals or communicative service.

(16) "Competent or qualified person." A person who is familiar with the construction of, or operation of, such lines and/or equipment that concerns his position and who is fully aware of the hazards connected therewith OR one who has passed a journeyman's examination for the particular branch of the trades with which he may be connected. In case of dispute, competency shall be established by a committee appointed by the assistant director of the division of industrial safety and health consisting of representatives of all interested parties.

(17) "Conductor." A material, usually in the form of a wire, cable, or bus bar, suitable for carrying an electric current.

(18) "Effectively grounded." Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the build-up of voltages which may result in undue hazard to connected equipment or to persons.

(19) "Emergency." When an unusual condition exists that endangers life and/or property.

(20) "Energized." Electrically connected to a source of potential difference or electrically charged so as to have a potential different from that of the earth or different from that of adjacent conductors or equipment. For the purpose of these rules, potential differences less than 100 volts shall not apply. This definition does not include communication lines of less than 300 volts.

(21) "Equipment." A general term which includes materials, fittings, devices, appliances, fixtures, apparatus, and similar items used as part of, or in connection with, a supply or communications installation.

(22) "Foreman or man-in-charge." That person directly in charge of workers doing the work regardless of title.

(23) "Ground (reference)." That conductive body usually earth, to which an electric potential is referenced.

(24) "Ground (as a noun)." A conductive connection, whether intentional or accidental, by which an electric circuit or equipment is connected to reference ground.

(25) "Ground (as a verb)." The connecting or establishment of a connection, whether by intention or accident, of an electric circuit or equipment to reference ground.

(26) "Grounding." The act of placing shorts and grounds on conductors and equipment for the purpose of protecting workers from dangerous voltages while working on such lines or equipment.

(27) "Ground tent." A small tent usually constructed of vinyl coated canvas supported by a metal or plastic frame. Its purpose is to protect employees from inclement weather while working at buried cable pedestal sites or similar locations.

(28) "Grounded conductor." A system or circuit conductor which is intentionally grounded.

(29) "Grounded systems." A system of conductors in which at least one conductor or point (usually the middle wire, or the neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current-limiting device (not a current-interrupting device).

(30) "Grounding electrode conductor (grounding conductor)." A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode.

(31) "Guard or guarded." Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, platforms, or warning signs or devices to remove the possibility of

dangerous contact on approach by other persons or objects to a point of danger.

(32) "Insulated." Separated from other conducting surfaces by a dielectric substance (including air space) offering a high resistance to the passage of current.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is, within the purpose of these standards, uninsulated. Insulating coverings of conductors is one means of making the conductor insulated.

(33) "Insulation (as applied to cable)." That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

(34) "Joint use." The sharing of a common facility, such as a manhole, trench or pole, by two or more different kinds of utilities, (e.g., power and telecommunications).

(35) "Ladder platform." A device designed to facilitate working aloft from an extension ladder. A typical device consists of a platform (approximately 9" x 18") hinged to a welded pipe frame. The rear edge of the platform and the bottom crossmember of the frame are equipped with latches to lock the platform to ladder rungs.

(36) "Ladder seat." A removable seat used to facilitate work at an elevated position on rolling ladders in telecommunication centers.

(37) "Manhole." A subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining submersible equipment and/or cable.

(38) "Manhole platform." A platform consisting of separate planks which are laid across steel platform supports. The ends of the supports are engaged in the manhole cable racks.

(39) "Manlift equipment." Such types of portable truck-mounted equipment as mechanical, electric or hydraulic ladders and boom-mounted buckets or cages.

(40) "Microwave transmission." The act of communicating or signaling utilizing a frequency between 1 GH_z (gigahertz) and 300 GH_z inclusively.

(41) "Nominal voltage." The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The actual voltage may vary above or below this value.

(42) "Pole balcony or seat." A balcony or seat used as a support for workers at pole-mounted equipment or terminal boxes. A typical device consists of a bolted assembly of steel details and a wooden platform. Steel braces run from the pole to the underside of the balcony. A guard rail (approximately 30" high) may be provided.

(43) "Pole platform." A platform intended for use by a worker in splicing and maintenance operations in an elevated position adjacent to a pole. It consists of a platform equipped at one end with a hinged chain binder for securing the platform to a pole. A brace from the pole to the underside of the platform is also provided.

(44) "Protection from hazardous voltage." The isolation from or de-energizing of equipment to prevent accidental contact by persons or objects on approach to point of danger.

(45) "Protective devices." Those devices such as rubber gloves, rubber blankets, line hose, rubber hoods or other insulating devices, which are specially designed for the protection of workers.

(46) "Public highway." Every way, land, road, street, boulevard, and every way or place in the state open as matter of right to public vehicular travel, both inside and outside the limit of cities and towns.

(47) "Qualified employee." Any worker who by reason of his training and experience has demonstrated his ability to safely perform his duties.

(48) "Qualified line-clearance tree trimmer." A tree worker who through related training and on-the-job experience is familiar with the special techniques and hazards involved in line clearance.

(49) "Qualified line-clearance tree-trimmer trainee." Any worker regularly assigned to a line-clearance tree-trimming crew and undergoing on-the-job training who, in the course of such training, has demonstrated his ability to perform his duties safely at his level of training.

(50) "Sheath." As applied to sharp tools that effectively covers the tool.

(51) "System operator/owner." The person or organization that operates or controls the electrical conductors involved.

(52) "Telecommunications center." An installation of communication equipment under the exclusive control of an organization providing telecommunications service, that is located outdoors or in a vault, chamber, or a building space used primarily for such installations.

Note: Telecommunication centers are facilities established, equipped and arranged in accordance with engineered plans for the purpose of providing telecommunications service. They may be located on premises owned or leased by the organization providing telecommunication service, or on the premises owned or leased by others. This definition includes switch rooms (whether electromechanical, electronic, or computer controlled), terminal rooms, power rooms, repeater rooms, transmitter and receiver rooms, switchboard operating rooms, cable vaults, and miscellaneous communications equipment rooms. Simulation rooms of telecommunication centers for training or developmental purposes are also included.

(53) "Telecommunications derricks." Rotating or nonrotating derrick structures permanently mounted on vehicles for the purpose of lifting, lowering, or positioning hardware and materials used in telecommunications work.

(54) "Telecommunication line truck." A truck used to transport men, tools, and material, and to serve as a traveling workshop for telecommunication installation and maintenance work. It is sometimes equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material or workers.

(55) "Telecommunication service." The furnishing of a capability to signal or communicate at a distance by means such as telephone, telegraph, police and fire-alarm, community antenna television, or similar system,

using wire, conventional cable, coaxial cable, wave guides, microwave transmission, or other similar means.

(56) "Unvented vault." An enclosed vault in which the only openings are access openings.

(57) "Vault." An enclosure above or below ground which personnel may enter, and which is used for the purpose of installing, operating, and/or maintaining equipment and/or cable which need not be of submersible design.

(58) "Vented vault." An enclosure as described in subsection (57) of this section, with provision for air changes using exhaust flue stack(s) and low level air intake(s), operating on differentials of pressure and temperature providing for air flow.

(59) "Voltage communications." Voltage used for electronic communications equipment to which workers or protective equipment may be subjected.

(a) *High* means over 600 volts to ground—RMS AC or DC or over 1,000 volts RMS across bare parts.

(b) *Medium high* means 151 to 600 volts to ground—RMS AC or DC or 301 to 1,000 volts RMS AC across any bare parts.

(60) "Voltage electric supply." The maximum effective line voltage to which the workers or protective equipment may be subjected.

(a) *Low* includes voltages from 100 to 750 volts.

(b) *High* means those voltages in excess of 750 volts.

(61) "Voltage of an effectively grounded circuit." The voltage between any conductor and ground unless otherwise indicated.

(62) "Voltage of a circuit not effectively grounded." The voltage between any two conductors. If one circuit is directly connected to and supplied from another circuit of higher voltage (as in the case of an autotransformer), both are considered as of the higher voltage, unless the circuit of lower voltage is effectively grounded, in which case its voltage is not determined by the circuit of higher voltage. Direct connection implies electric connection as distinguished from connection merely through electromagnetic or electrostatic induction.

[Order 76-38, § 296-32-210, filed 12/30/76; Order 75-41, § 296-32-210, filed 12/19/75.]

WAC 296-32-215 Safe place standard. (1) No employer shall require any employee to go or be in any employment or place of employment which is not safe.

(2) No employer shall fail or neglect:

(a) Provide safe access to the work site.

(b) To provide and use safety devices and safeguards.

(c) To adopt and use methods and processes to render the employment and place of employment safe.

(d) To do every other thing reasonably necessary to protect the life and safety of employees.

[Order 76-38, § 296-32-215, filed 12/30/76.]

WAC 296-32-220 General. (1) Buildings containing telecommunications centers.

(a) Illumination. Lighting in telecommunication centers shall be provided in an amount such that continuing work operations, routine observations, and the passage of employees can be carried out in a safe and healthful manner.

(b) Specific tasks in centers, such as splicing cable and the maintenance and repair of equipment frame lineups, the employer shall install permanent lighting or portable supplemental lighting to attain a higher level of illumination.

(c) Refer to WAC 296-62-09003 (general occupational health standards) which shall apply as minimum standards of illumination for industrial interiors.

(d) Illumination of field work. Whenever natural light is insufficient to illuminate the worksite, artificial illumination shall be provided to enable the employee to perform the work safely.

(2) Working surfaces. (a) Working surfaces shall be in conformance with the latest edition of the general safety and health standard WAC 296-24-735 through 296-24-76523.

(b) Guard rails and toe boards may be omitted on distribution frame mezzanine platforms to permit access to equipment. This exemption applies only on the side or sides of the platform facing the frames and only on those portions of the platform adjacent to equipped frames.

(3) Working spaces.

(a) Space shall be provided for access to all medium high and high voltage equipment.

(b) Every structure, new or old, designed for human occupancy shall be provided with exits to permit the prompt escape of occupants in case of fire or other emergency. The means of egress shall be a continuous and unobstructed way of exit travel from any point in a building or structure to a public way and consist of three separate and distinct parts; the way of exit access, the exit and the way of exit discharge. A means of egress comprises the vertical and horizontal ways of travel and shall include intervening room spaces, doorways, hallways, corridors, passageways, balconies, ramps, stairs, enclosures, lobbies, escalators, horizontal exits, courts and yards.

(c) "Maintenance aisles," or "wiring aisles," between equipment frame lineups are working spaces and are not a means of egress for purposes of WAC 296-24-550(1).

(4) Special doors.

(a) When blastproof or power actuated doors are installed in specially designed hardsite security buildings and spaces, they shall be designed and installed so that they can be used as a means of egress in emergencies.

(b) When high voltage apparatus is isolated in a supplementary enclosure, interlocks shall be provided on all access doors. Warning signs shall be provided, which are visible both when the guard or cover is in place or removed.

(5) Equipment, machinery and machine guarding.

(a) When power plant machinery in telecommunications centers is operated with commutators and couplings uncovered, the adjacent housing shall be clearly marked to alert personnel to the rotating machinery.

(b) All power switches on power panels shall be in an open position when they are not controlling an operating circuit. Before opening any power circuit, the load shall be reduced. "Men working" signs shall be placed on

switches associated with motors or generators under repair.

(c) When working on the brushes of a machine in operation, employees shall use care not to break a circuit. When it is necessary to remove a brush from the holder, the machine shall be shut down.

(d) Only fuse pullers specifically designed for that purpose shall be used when replacing cartridge type fuses.

(6) Battery handling.

(a) Eye protection devices which provide side as well as frontal eye protection for employees shall be provided when measuring storage battery specific gravity or handling electrolyte, and the employer shall ensure that such devices are used by the employees.

(b) The employer shall also ensure that acid resistant gloves and aprons shall be worn for protection against spattering.

(c) Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities.

(d) Employees assigned to work with storage batteries shall be instructed in emergency procedures such as dealing with accidental acid spills.

(e) Electrolyte (acid or base, and distilled water) for battery cells shall be mixed in a well ventilated room. Acid or base shall be poured gradually, while stirring, into the water. Water shall never be poured into concentrated (greater than 75 percent) acid solutions. Electrolyte shall never be placed in metal containers nor stirred with metal objects.

(f) When taking specific gravity readings, the open end of the hydrometer shall be covered with an acid resistant material while moving it from cell to cell to avoid splashing or throwing the electrolyte.

(g) Ventilation, shall be provided to ensure diffusion of the gasses from the battery to prevent the accumulation of an explosive type mixture.

(h) Racks and trays shall be substantial and treated to be resistant to the electrolyte.

(i) Floors shall be of acid resistant construction or be protected from acid accumulation.

(7) Hazardous materials.

(a) Highway mobile vehicles and trailers stored in garages in accordance with WAC 296-24-47513 (4)(b) may be equipped to carry more than one LP-gas container, but the total capacity of LP-gas containers per work vehicle stored in garages shall not exceed 100 pounds of LP-gas.

(b) All container valves shall be closed when not in use.

(8) Compressed gas.

(a) When using or transporting nitrogen cylinders, special compartments, racks, or blocking shall be provided to prevent cylinder movement.

(b) Regulators shall be removed or guarded before a cylinder is transported.

(9) Support structures.

(a) No employee, or any material or equipment, shall be supported or permitted to be supported on any portion of a pole structure, platform, ladder, walkway or other elevated structure or aerial device unless the employer ensures that the support structure is first inspected by a competent person and it is determined to be strong, in good working condition and properly secured in place.

(b) Workmen shall not throw anything from pole to ground, from pole to pole or from ground to pole.

(10) Power exposures.

(a) The employer shall ensure that no employee approaches or takes any conductive object closer to any electrically energized overhead power lines and parts than prescribed in Table 1 unless:

(i) The employee is insulated or guarded from the energized parts (insulating gloves rated for the voltage involved shall be considered adequate insulation), or

(ii) The energized parts are insulated or guarded from the employee and any other conductive object at a different potential, or

(iii) The power conductors and equipment are deenergized and grounded.

(b) While handling communication wires, metal sheaths, or communication equipment, contact shall be avoided with street lamp brackets, trolley span wires, power guys, transformer cases and any other power equipment that may be energized. The safest possible working position shall be assumed before starting work.

(c) Communication employees shall never work in the pole space on jointly used poles between normal primary and secondary attachments.

(d) Where a hazard of a power contact exists, due to use of long handled tools, proper rubber equipment shall be used.

TABLE 1

APPROACH DISTANCES TO EXPOSED ENERGIZED OVERHEAD POWER LINES AND PARTS

Voltage Range (phase to phase, RMS)	Approach Distance (inches)
300 V and less	(1)
Over 300 V, not over 750 V	12
Over 750 V not over 2 kV	18
Over 2 kV, not over 15 kV	24
Over 15 kV, not over 37 kV	36
Over 37 kV, not over 87.5 kV	42
Over 87.5 kV, not over 121 kV	48
Over 121 kV, not over 140 kV	54

(1) Avoid contact.

[Order 76-38, § 296-32-220, filed 12/30/76; Order 75-41, § 296-32-220, filed 12/19/75.]

WAC 296-32-230 Training. (1) Employers shall provide training in the various precautions and safe practices described in this section and shall insure that employees do not engage in the activities to which this chapter applies until such employees have received

proper training in the various precautions and safe practices required by this section. However, where the employer can demonstrate that an employee is already trained in the precautions and safe practices required by this section prior to his employment, training need not be provided to that employee in accordance with this section.

(2) Where training is required, it shall consist of on-the-job training or classroom-type training or a combination of both.

(3) The training program shall include a list of the subject courses and the types of personnel required to receive such instruction. A written description of the training program and a record of employees who have received such training shall be maintained for the duration of the employee's employment and shall be made available upon request to the assistant director of industrial safety and health, or his authorized representative.

(4) Such training shall, where appropriate, include the following subjects:

(a) Recognition and avoidance of dangers relating to encounters with harmful substances, and animal, insect, or plant life.

(b) Procedures to be followed in emergency situations, and

(c) First aid training, including instruction in artificial respiration.

(5) It shall be the responsibility of the employer to hold monthly safety meetings at practical points throughout the operation and insist upon employees attending said meetings. Minutes shall be kept of each safety meeting and retained for a period of one year.

[Order 76-38, § 296-32-230, filed 12/30/76; Order 75-41, § 296-32-230, filed 12/19/75.]

WAC 296-32-240 Employee protection in public work areas. (1)(a) Before work is begun in the vicinity of vehicular or pedestrian traffic which may endanger employees, warning signs and/or flags or other traffic control devices shall be placed conspicuously to alert and channel approaching traffic. Where further protection is needed, barriers shall be utilized.

(b) At night, warning lights shall be prominently displayed, and excavated areas shall be enclosed with protective barricades.

(2) When work exposes energized or moving parts that are normally protected, danger signs shall be displayed and barricades erected to warn other personnel in the area.

(3) The employer shall insure that an employee finding any crossed or fallen wires which create or may create a hazardous situation at the work area:

(a) Remains on guard or adopts other adequate means to warn other employees of the danger, and

(b) Has the proper authority notified at the earliest practical moment.

[Order 76-38, § 296-32-240, filed 12/30/76; Order 75-41, § 296-32-240, filed 12/19/75.]

WAC 296-32-250 Tools and personal protective equipment--General. (1) Personal protective equipment, protective devices and special tools needed for the work of employees shall be provided and the employer shall ensure that they are used by employees.

(a) Before each day's use the employer shall ensure that these personal protective devices, tools, and equipment are carefully inspected by a competent person to ascertain that they are in good condition.

(b) Tools found to be defective shall be taken out of service.

(2) Head protection. Head protection meeting the requirements of ANSI Z89.2-1971, "Safety Requirements for Industrial Protective Helmets for Electrical Workers, Class B" shall be provided whenever there is exposure to overhead hazards and/or possible high voltage electrical contact.

(a) Employees working in areas where there is a possible danger of head injury from impact, falling or flying objects, shall be protected by protective helmets. These helmets shall meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.

(b) The employer shall insure that the head protection is used by the employee.

(3) Eye protection. Protective eye and face equipment shall be required where there is a possibility of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors.

(4) Tent heaters, torches and open flame. Open flames shall not be used within ground tents or on platforms within aerial tents unless:

(a) The tent covers are constructed of fire resistant materials, and

(b) Ventilation is provided to maintain safe oxygen levels and avoid harmful buildup of combustion products and combustible gases.

(5) Portable power equipment.

(a) All portable power equipment used in the telecommunications industry shall be grounded.

(b) Nominal 120V, or less, portable generators used for providing power at work locations do not require grounding if the output circuit is completely isolated from the frame of the unit.

(c) Grounding shall be omitted when using soldering irons, guns or wire-wrap tools on telecommunication circuits.

(6) Vehicle-mounted utility generators. Vehicle-mounted utility generators used for providing nominal 240V AC or less for powering portable tools and equipment need not be grounded to earth if all of the following conditions are met:

(a) One side of the voltage source is solidly strapped to the metallic structure of the vehicle;

(b) Grounding-type outlets are used, with a "grounding" conductor between the outlet grounding terminal and the side of the voltage source that is strapped to the vehicle;

(c) All metallic encased tools and equipment that are powered from this system are equipped with three-wire

cords and grounding-type attachment plugs, except as designated in subsection (7) of this section.

(7) Portable lights, tools and appliances. When operated from commercial power such metal parts of these devices shall be grounded, unless these tools or appliances are protected by a system of double insulation, or its equivalent. Where such a system is employed, the equipment shall be distinctively marked to indicate double insulation.

(8) Lead work. When operated from commercial power the metal housing of electric solder pots shall be grounded. Electric solder pots may be used with the power equipment described in this subsection, without a grounding conductor.

The employer shall ensure that wiping gloves or cloths and eye protection are used in lead wiping operations. A drip pan to catch hot lead drippings shall also be provided and used.

(9) Fire extinguishers.

(a) Fire extinguishers shall be provided for the protection of both the building structure and the occupancy hazards contained therein.

(b) Employees shall be familiar with the location and operation of fire extinguishers.

(c) Any fire extinguishers showing defects shall be removed from service.

(d) Fire extinguishers shall be thoroughly examined and/or recharged or repaired to insure operability and safety once every year.

(e) Each fire extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initials or signature of the person performing this service.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-32-250, filed 6/11/82; Order 76-38, § 296-32-250, filed 12/30/76; Order 75-41, § 296-32-250, filed 12/19/75.]

WAC 296-32-260 Rubber insulating equipment. (1) Rubber insulating equipment designed for the voltage levels to be encountered shall be provided and the employer shall ensure that they are used by employees as required by this section. This equipment shall meet the electrical and physical requirements contained in ANSI J6.6-1971 "Standard Specifications for Rubber Insulating Gloves," and ANSI J6.4-1971 "Standard Specifications for Rubber Insulating Blankets," with the exception that the maximum proof test current for a 14-inch Class I glove shall be no more than 14mA, and with the further exception that existing 14-inch Class I rubber gloves that meet a maximum proof test current of 14 mA and a minimum breakdown voltage of 10,000 volts (RMS) acquired prior to January 1, 1976, may be used as long as these gloves comply with the retest requirements of subsection (2) of this section.

(2) The employer is responsible for periodic retesting of all insulating gloves, blankets, and other rubber insulating equipment. This retesting shall be electrical, visual and mechanical. The following maximum retesting intervals shall apply:

Gloves, Blankets, and Other Insulating Equipment	Natural Rubber (Months)	Synthetic Rubber (Months)
New	12	18
Reissued	9	15

(3) Protector for gloves. Approved protectors must be worn at all times over rubber gloves. Inner liners may be worn if desired.

(4) Protective equipment fabricated of material other than rubber shall provide electrical and mechanical protection at least equal to that of the rubber equipment.

(5)(a) Gloves and blankets shall be marked to indicate compliance with the retest schedule and shall be marked with the date the next test date is due.

(b) Any rubber gloves found to be defective shall be removed from service and marked as being defective.

(6) Insulating gloves and blankets shall be stored away from direct sunlight, steampipes, radiators and other sources of excessive heat.

(7) Gloves and blankets shall not be folded while in storage. A separate container shall be provided for rubber blankets and blankets shall be wiped clean and rolled before placing in container.

(8) Inspect rubber goods. Before using a pair of rubber gloves or rubber blankets, workers shall personally inspect each glove for defects and give an air test, and the blanket shall be visually inspected for cracks or cuts before using.

Note: Grasp the cuff at opposite sides and twirl the gloves so as to roll it up the cuff and produce air pressure within the glove, then look for leaks and thin places in the rubber.

(9) Patching rubber goods is prohibited; rubber protective equipment shall not be vulcanized or patched.

(10) Rubber gloves for workers. A pair of rubber gloves, specifically designed for the protection of workers, shall be assigned each worker when required to work on or be exposed to energized parts.

(b) Rubber gloves when not in use shall be carried in a bag provided and designed for that purpose.

[Order 76-38, § 296-32-260, filed 12/30/76; Order 75-41, § 296-32-260, filed 12/19/75.]

WAC 296-32-270 Personal climbing equipment. (1) General. Safety belts and straps shall be provided and the employer shall ensure their use when work is performed at positions more than 4 feet above ground, on poles, and on towers, except as provided in WAC 296-32-340 (7)(8) of this chapter. No safety belts, safety straps or lanyards acquired after January 1, 1976, may be used unless they meet the tests set forth in chapter 296-45 WAC. The employer shall ensure that all safety belts and straps are inspected by a competent person prior to each day's use to determine that they are in safe working condition.

(2) Telecommunication lineman's body belts, safety straps and lanyards.

(a) General requirements.

(i) Hardware for lineman's body belts, safety straps and lanyards shall be drop forged or pressed steel and shall have a corrosion resistant finish tested to meet the requirements of the American Society for Testing and Materials B117–64 (50–hour test).

EXCEPTION: Lineman's body belts shall be at least four inches in width.

(3) Pole climbers.

(a) Pole climbers may not be used if the gaffs are less than 1–1/4 inches in length as measured on the underside of the gaff.

(i) The gaffs of pole climbers shall be covered with safety caps when not being used for their intended use.

(b) The employer shall ensure that pole climbers are inspected by a competent person for the following conditions: Fractured or cracked gaffs or leg irons, loose or dull gaffs, broken straps or buckles. If any of these conditions exist, the defect shall be corrected before the climbers are used.

(c) Pole climbers shall be inspected as required in this subsection before each day's use and a gaff cut–out test performed at least weekly when in use.

(d) Pole climbers shall not be worn when:

(i) Working in trees (specifically designed tree climbers shall be used for tree climbing),

(ii) Working on ladders,

(iii) Working in an aerial lift,

(iv) Driving a vehicle,

(v) Walking on rocky, hard, frozen, brushy or hilly terrain.

[Order 76–38, § 296–32–270, filed 12/30/76; Order 75–41, § 296–32–270, filed 12/19/75.]

WAC 296–32–280 Ladders. (1) The employer shall ensure that no employee nor any material or equipment shall be supported or permitted to be supported on any portion of a ladder unless it is first determined, by inspections and checks conducted by a competent person that such ladder is free of defects, in good condition and secured in place.

(2) The spacing between steps or rungs permanently installed on poles and towers shall be no more than 18 inches (36 inches on any one side). This requirement also applies to fixed ladders on towers, when towers are so equipped. Spacing between steps shall be uniform above the initial unstepped section, except where working, standing, or access steps are required. Fixed ladder rungs and step rungs for poles and towers shall have a minimum diameter of 5/8 inch. Fixed ladder rungs shall have a minimum clear width of 12 inches. Steps for poles and towers shall have a minimum clear width of 4–1/2 inches. The spacing between detachable steps may not exceed 30 inches on any one side, and these steps shall be secured when in use.

(3) After October 31, 1975, portable wood ladders intended for general use shall not be painted but may be coated with a translucent nonconductive coating. Portable wood ladders shall not be longitudinally reinforced with metal.

(4) Portable wood ladders that are not being carried on vehicles and are not in active use shall be stored where they will not be exposed to the elements and where there is good ventilation.

(5) Rolling ladders used in telecommunication centers shall have a width between the side rails, inside to inside, of at least 12 inches.

(a) Except in working spaces that are not a means of egress, the ladders shall have a minimum inside width, between the side rails, of at least eight inches.

(6) Climbing ladders or stairways on scaffolds used for access and egress shall be affixed or built into the scaffold by proper design and engineering, and shall be so located that their use will not disturb the stability of the scaffold. The rungs of the climbing device shall be equally spaced, but may not be less than 12 inches nominal nor more than 16 inches nominal apart. Horizontal end rungs used for platform support may also be utilized as a climbing device if such rungs meet the spacing requirement of this subsection, and if clearance between the rung and the edge of the platform is sufficient to afford a secure handhold. If a portable ladder is affixed to the scaffold, it shall be securely attached and shall have rungs meeting the spacing requirements of this subsection. Clearance shall be provided in the back of the ladder of not less than 6 inches from center of rung to the nearest scaffold structural member.

(7) When a ladder is supported by an aerial strand, and ladder hooks or other supports are not being used, the ladder shall be extended at least 2 feet above the strand and shall be secured to it (e.g. lashed or held by a safety strap around the strand and ladder side rail). When a ladder is supported by a pole, it shall be securely lashed to the pole unless the ladder is specifically designed to prevent movement when used in this application.

(8) Portable wood straight ladders, when in use, shall be equipped with safety shoes.

(9) Ladders shall be inspected by a competent person prior to each use. Ladders which have developed defects shall be withdrawn from service for repair or destruction and tagged or marked as "dangerous do not use."

[Order 76–38, § 296–32–280, filed 12/30/76; Order 75–41, § 296–32–280, filed 12/19/75.]

WAC 296–32–290 Vehicle–mounted material handling devices and other mechanical equipment. (1) General.

(a) The employer shall ensure that visual inspections are made of the equipment by a competent person each day the equipment is to be used to ascertain that it is in good condition.

(b) The employer shall ensure that tests shall be made at the beginning of each shift by a competent person to insure the vehicle brakes and operating systems are in proper working condition.

(2) Scrapers, loaders, dozers, graders and tractors.

(a) All mobile, self–propelled scrapers, mobile front end loaders, mobile dozers, agricultural and industrial tractors, crawler tractors, crawler–type loaders, and motor graders, with or without attachments, that are used

in telecommunications work shall have rollover protective structures that meet the requirements of WAC 296-155-950 through 296-155-965.

(3) Aerial manlift equipment.

(a) These devices shall not be operated with any conductive part of the equipment closer to exposed energized power lines than the clearances set forth in Table 1 of this chapter.

(b) Only qualified drivers shall be permitted to operate aerial manlift equipment and shall possess a current motor vehicle operator's license.

(c) When performing work from aerial manlift equipment, the workman shall wear a safety belt attached to the boom.

(d) When any aerial manlift equipment is parked at the jobsite, the brakes shall be set. Wheel chocks shall be used to prevent uncontrolled movement. If equipped with outriggers, the outriggers shall be implanted on firm footing.

(e) Manufacturer's recommended maximum load limit shall be posted near each set of controls, kept in legible condition and the maximum load limit shall not be exceeded.

(f) Flashing warning lights shall be installed and maintained on all aerial manlift equipment used on public thoroughfares.

(4)(a) The operation of all motor vehicles and trailers shall be in conformance with the motor vehicle laws, the general safety and health standards of the state of Washington and all local traffic ordinances.

(b) When it is necessary for the worker to work in the bucket at an elevated position with the vehicle in motion, there shall be direct communication between the worker and the vehicle operator.

(5) Derrick trucks and similar equipment.

(a) This equipment shall not be operated with any conductive part of the equipment closer to exposed energized power lines than the clearances set forth in Table 1 of this chapter.

(b) When derricks are used to handle poles near energized power conductors, these operations shall comply with the requirements contained in WAC 296-32-220(10) and 296-32-330(11) of this chapter.

(c) Moving parts of equipment and machinery carried on or mounted on telecommunications line trucks shall be guarded. This may be done with barricades as specified in WAC 296-32-240(2) of this chapter.

(d) Derricks and the operation of derricks shall comply with the following requirements:

(i) Manufacturer's specifications, load ratings and instructions for derrick operation shall be strictly observed.

(ii) Rated load capacities and instructions related to derrick operation shall be conspicuously posted on a permanent weather-resistant plate or decal in a location on the derrick that is plainly visible to the derrick operator.

(iii) Prior to derrick operation the parking brake must be set and the stabilizers extended if the vehicle is so equipped. When the vehicle is situated on a grade, at least two wheels must be chocked on the downgrade side.

(iv) Only persons trained in the operation of the derrick shall be permitted to operate the derrick.

(v) Hand signals to derrick operators shall be those prescribed by ANSI B30.6-1969, "Safety Code for Derricks."

(vi) The employer shall ensure that the derrick and its associated equipment are inspected by a competent person at intervals set by the manufacturer but in no case less than once per year. Records shall be maintained including the dates of inspections, and necessary repairs made.

(vii) Modifications or additions to the derrick and its associated equipment that alter its capacity or affect its safe operation shall be made only with written certification from the manufacturer, or other equivalent entity, such as a nationally recognized testing laboratory, that the modification results in the equipment being safe for its intended use. Such changes shall require the changing and posting of revised capacity and instruction decals or plates. These new ratings or limitations shall be as provided by the manufacturer or other equivalent entity.

(viii) Wire rope used with derricks shall be of improved plow steel or equivalent. Wire rope safety factors shall be in accordance with American National Standards Institute B30.6-1969.

(ix) Wire rope shall be taken out of service, or the defective portion removed, when any of the following conditions exist:

(A) The rope strength has been significantly reduced due to corrosion, pitting, or excessive heat, or

(B) The thickness of the outer wires of the rope has been reduced to two-thirds or less of the original thickness, or

(C) There are more than six broken wires in any one rope lay, or

(D) There is excessive permanent distortion caused by kinking, crushing, or severe twisting of the rope.

[Order 76-38, § 296-32-290, filed 12/30/76; Order 75-41, § 296-32-290, filed 12/19/75.]

WAC 296-32-300 Materials handling and storage. (1) Poles.

(a) When working with poles in piles or stacks, work shall be performed from the ends of the poles and precautions shall be taken for the safety of employees at the other end of the pole.

(b) During pole hauling operations, all loads shall be secured to prevent displacement. Lights, reflectors and/or flags shall be displayed on the end and sides of the load.

(c) The requirements for installation, removal, or other handling of poles in pole lines are prescribed in WAC 296-32-330 which pertains to overhead lines.

(d) In the case of hoisting machinery equipped with a positive stop load-holding device, it shall be permissible for the operator to leave his position at the controls (while a load is suspended) for the sole purpose of assisting in positioning the load prior to landing it.

(e) Prior to unloading steel, poles, crossarms, and similar material, the load shall be thoroughly examined to ascertain that the load has not shifted, that binders or

stakes have not broken, and that the load is not otherwise hazardous to employees.

(2) Cable reels. Cable reels and poles in storage shall be checked or otherwise restrained to prevent uncontrollable movement.

(3) All tools and materials shall be stored in a safe and orderly manner.

(4) Workers shall not carry loose materials, tools, or equipment on or in vehicles in a manner that would constitute a hazard.

(5) All buildings, storage yards, equipment and other property shall be kept in a clean and orderly manner.

[Order 76-38, § 296-32-300, filed 12/30/76; Order 75-41, § 296-32-300, filed 12/19/75.]

WAC 296-32-310 Cable fault locating and testing. (1) Employees involved in using high voltages to locate trouble or test cables shall be instructed in the precautions necessary for their own safety and the safety of other employees.

(2) Before voltage is applied to equipment not isolated, all possible precautions shall be taken to insure that no employee can make contact with the energized conductors under test.

(3) Only trained and authorized personnel shall repair and test medium and high voltage equipment.

[Order 76-38, § 296-32-310, filed 12/30/76; Order 75-41, § 296-32-310, filed 12/19/75.]

WAC 296-32-320 Grounding for employee protection--Pole lines. (1) Power conductors. Electric power conductors and equipment shall be considered as energized until the employee can determine that they are bonded to one of the grounds as listed in subsection (4) of this section.

(2) Nonworking open wire. Nonworking open wire communications lines shall be bonded to one of the grounds listed in subsection (4) of this section.

(3) Vertical power conduit, power ground wires and street light fixtures.

(a) Metal power conduit on joint use poles, exposed vertical power ground wires, and street light fixtures which are below communications attachments or less than 20 inches above these attachments, shall be considered energized and shall be tested for voltage unless the employee can visually determine that they are bonded to the communications suspension strand or cable sheath.

(b) If no hazardous voltage is shown by the voltage test, a temporary bond shall be placed between such street light fixture, exposed vertical power grounding conductor, or metallic power conduit and the communications cable strand. Temporary bonds used for this purpose shall have sufficient conductivity to carry at least 500 amperes for a period of one second without fusing.

(4) Protective grounding. Acceptable grounds for protective grounding are as follows:

(a) A vertical ground wire which has been tested, found safe, and is connected to a power system multigrounded neutral or the grounded neutral of a power secondary system where there are at least three services connected;

(b) Communications cable sheath or shield and its supporting strand where the sheath or shield is:

(i) Bonded to an underground or buried cable which is connected to a central office ground, or

(ii) Bonded to an underground metallic piping system, or

(iii) Bonded to a power system multigrounded neutral or grounded neutral of a power secondary system which has at least three services connected;

(c) Guys which are bonded to the grounds specified in subdivisions (a) and (b) of this subsection and which have continuity uninterrupted by an insulator; and

(d) If all of the preceding grounds are not available, arrays of driven ground rods where the resultant resistance to ground will be low enough to eliminate danger to personnel or permit prompt operation of protective devices.

(5) Attaching and removing temporary bonds. When attaching grounds (bonds), the first attachment shall be made to the protective ground. When removing bonds, the connection to the line or equipment shall be removed first. Insulating gloves shall be worn during these operations.

(6) Temporary grounding of suspension strand.

(a) The suspension strand shall be grounded to the existing grounds listed in subsection (4) of this section when being placed on jointly used poles.

(b) Where power crossings are encountered on nonjoint lines, the strand shall be bonded to an existing ground listed in subsection (4) of this section as close as possible to the crossing. This bonding is not required where crossings are made on a common crossing pole unless there is an upward change in grade at the pole.

(c) Where traveling roller-type bonds are used, they shall be restrained so as to avoid stressing the electrical connections.

(d) Bonds between the suspension strand and the existing ground shall be at least No. 6AWG copper.

(e) Temporary bonds shall be left in place until the strand has been tensioned, dead-ended, and permanently grounded.

(f) The requirements of subdivision (a) through (e) of this subsection do not apply to the installation of insulated strand.

(7) Antenna work-radio transmitting stations 3-30 MHZ.

(a) Prior to grounding a radio transmitting station antenna, the employer shall insure that the rigger in charge:

(i) Prepares a danger tag signed with his signature,

(ii) Requests the transmitting technician to shutdown the transmitter and to ground the antenna with its grounding switch,

(iii) Is notified by the transmitting technician that the transmitter has been shutdown, and

(iv) Tags the antenna ground switch personally in the presence of the transmitting technician after the antenna has been grounded by the transmitting technician.

(b) Power shall not be applied to the antenna, nor shall the grounding switch be opened under any circumstances while the tag is affixed.

(c)(i) Where no grounding switches are provided, grounding sticks shall be used, one on each side of line, and tags shall be placed on the grounding sticks, antenna switch, or plate power switch in a conspicuous place.

(ii) To further reduce excessive radio frequency pickup, ground sticks or short circuits shall be placed directly on the transmission lines near the transmitter in addition to the regular grounding switches.

(iii) In other cases, the antenna lines may be disconnected from ground and the transmitter to reduce pickup at the point in the field.

(d) All radio frequency line wires shall be tested for pickup with an insulated probe before they are handled either with bare hands or with metal tools.

(e) The employer shall insure that the transmitting technician warn the riggers about adjacent lines which are, or may become energized.

(f) The employer shall insure that when antenna work has been completed, the rigger in charge of the job returns to the transmitter, notifies the transmitting technician in charge that work has been completed, and personally removes the tag from the antenna ground switch.

[Order 76-38, § 296-32-320, filed 12/30/76; Order 75-41, § 296-32-320, filed 12/19/75.]

WAC 296-32-330 Overhead lines. (1) Handling suspension strand.

(a) The employer shall insure that when handling cable suspension strand which is being installed on poles carrying exposed energized power conductors, employees shall wear insulating gloves and shall avoid body contact with the strand until after it has been tensioned, dead-ended and permanently grounded.

(b) The strand shall be restrained against upward movement during installation:

(i) On joint-use poles, where there is an upward change in grade at the pole, and

(ii) On nonjoint-use poles, where the line crosses under energized power conductors.

(2) Need for testing wood poles. Unless temporary guys or braces are attached, the following poles shall be tested in accordance with subsection (3) of this section and determined to be safe before employees are permitted to climb them:

(a) Dead-end poles, except properly braced or guyed "Y" or "T" cable junction poles,

(b) Straight line poles which are not storm guyed and where adjacent span lengths exceed 165 feet.

(c) Poles at which there is a downward change in grade and which are not guyed or braced corner poles or cable junction poles.

(d) Poles which support only telephone drop wire, and

(e) Poles which carry less than ten communication line wires. On joint use poles, one power line wire shall be considered as two communication wires for purposes of this subdivision (2)(e).

(3) Methods for testing wood poles. The following method or an equivalent method shall be used for testing wood poles:

(a) Rap the pole sharply with a lineman's hammer, starting near the ground line and continuing upwards circumferentially around the pole to a height of approximately 6 feet. The hammer will produce a clear sound and rebound sharply when striking sound wood. Decay pockets will be indicated by a dull sound and/or a less pronounced hammer rebound. When decay pockets are indicated, the pole shall be considered unsafe.

(b) The pole shall be prodded as near the ground line as possible using a pole prod or a screwdriver with a single blade at least five inches long.

(c) If the pole is found unsafe, it shall be guyed or braced or supported in such a manner as to allow workers to safely perform their work.

(4) Unsafe poles or structures.

(a) Poles or structures determined to be unsafe by test or observation may not be climbed until made safe by guying, bracing or other means.

(b) Poles determined to be unsafe to climb shall, until they are made safe, be marked in a conspicuous place to alert and warn all employees of the unsafe condition.

(5) Test requirements for cable suspension strand.

(a) Before attaching a splicing platform to a cable suspension strand, the strand shall be tested and determined to have strength sufficient to support the weight of the platform and the employee. Where the strand crosses above power wires or railroad tracks it may not be tested but shall be inspected in accordance with subsection (6) of this section.

(b) The following method or an equivalent method shall be used for testing the strength of the strand: A rope, at least three-eighths inches in diameter, shall be thrown over the strand. On joint lines, the rope shall be passed over the strand using tree pruner handles or a wire raising tool. If two employees are present, both shall grip the double rope and slowly transfer their entire weight to the rope and attempt to raise themselves off the ground. If only one employee is present, one end of the rope which has been passed over the strand shall be tied to the bumper of the truck, or other equally secure anchorage. The employee then shall grasp the other end of the rope and attempt to raise himself off the ground.

(6) Inspection of strand. Where strand passes over electric power wires or railroad tracks, it shall be inspected from an elevated working position at each pole supporting the span in question. The strand may not be used to support any splicing platform, scaffold or cable car, if any of the following conditions exist:

(a) Corrosion so that no galvanizing can be detected,

(b) One or more wires of the strand are broken,

(c) Worn spots, or

(d) Burn marks such as those caused by contact with electric power wires.

(7) Outside work platforms. Unless railings are provided, safety straps and body belts shall be used while

working on elevated work platforms such as aerial splicing platforms, pole platforms, ladder platforms and terminal balconies.

(8) Other elevated locations. Safety straps and body belts shall be worn when working at elevated positions on poles, towers or similar structures, which do not have guarded work areas.

(9) Installing and removing wire and cable. Before installing or removing wire or cable, the pole or structure shall be guyed, braced, or otherwise supported, as necessary, to prevent failure of the pole or structure.

(10) Avoiding contact with energized power conductors or equipment. When cranes, derricks, or other mechanized equipment are used for setting, moving, or removing poles, all necessary precautions shall be taken to avoid contact with energized power conductors or equipment.

(11) Handling poles near energized power conductors.

(a) Joint use poles may not be set, moved, or removed where the nominal voltage of open electrical power conductors exceeds 34.5 kV phase to phase or 20 kV phase to ground.

(b) Poles that are to be placed, moved or removed during heavy rains, sleet or wet snow in joint lines carrying more than 8.7 kV phase to phase voltage or 5 kV phase to ground shall be guarded or otherwise prevented from direct contact with overhead energized power conductors.

(c)(i) In joint lines where the power voltage is greater than 750 volts but less than 34.5 kV phase to phase or 20 kV phase to ground, wet poles being placed, moved or removed shall be insulated with either a rubber insulating blanket, a fiberglass box guide, or equivalent protective equipment.

(ii) In joint lines where the power voltage is greater than 8.7 kV phase to phase or 5 kV phase to ground but less than 34.5 kV phase to phase or 20 kV phase to ground, dry poles being placed, moved, or removed shall be insulated with either a rubber insulating blanket, a fiberglass box guide, or equivalent protective equipment.

(iii) Where wet or dry poles are being removed, insulation of the pole is not required if the pole is cut off 2 feet or more below the lowest power wire and also cut off near the ground line.

(d) Insulating gloves shall be worn when handling the pole with either hands or tools, when there exists a possibility that the pole may contact a power conductor. Where the voltage to ground of the power conductor exceeds 15 kV to ground, Class II gloves (as defined in ANSI J6.6–1971) shall be used. For voltages not exceeding 15 kV to ground, insulating gloves shall have a breakdown voltage of at least 17 kV.

(e) The guard or insulating material used to protect the pole shall meet the appropriate 3 minute proof test voltage requirements contained in the ANSI J6.4–1971.

(f) When there exists a possibility of contact between the pole or the vehicle–mounted equipment used to handle the pole, and an energized power conductor, the following precautions shall be observed:

(i) When on the vehicle which carries the derrick, avoid all contact with the ground, with persons standing on the ground, and with all grounded objects such as guys, tree limbs, or metal sign posts. To the extent feasible, remain on the vehicle as long as the possibility of contact exists.

(ii) When it is necessary to leave the vehicle, step onto an insulating blanket and break all contact with the vehicle before stepping off the blanket and onto the ground. As a last resort, if a blanket is not available, the employee may jump cleanly from the vehicle.

(iii) When it is necessary to enter the vehicle, first step onto an insulating blanket and break all contact with the ground, grounded objects and other persons before touching the truck or derrick.

(12) Working position on poles. Climbing and working are prohibited above the level of the lowest electric power conductor on the pole (exclusive of vertical runs and street light wiring), except:

(a) Where communications facilities are attached above the electric power conductors, and a rigid fixed barrier is installed between the electric power facility and the communications facility, or

(b) Where the electric power conductors are cabled secondary service drops carrying less than 300 volts to ground and are attached 40 inches or more below the communications conductors or cables.

(13) Metal tapes and ropes.

(a) Metal measuring tapes, metal measuring ropes, or tapes containing conductive strands shall not be used when working near exposed energized parts.

(b) Where it is necessary to measure clearances from energized parts, only nonconductive devices shall be used.

[Order 76–38, § 296–32–330, filed 12/30/76; Order 75–41, § 296–32–330, filed 12/19/75.]

WAC 296-32-340 Underground lines and cable vaults. The provisions of this section apply to the guarding of manholes and street openings, and to the ventilation and testing for gas in manholes and unvented vaults, where telecommunications field work is performed on or with underground lines.

(1) Guarding manholes and street openings.

(a) When covers of manholes or vaults are removed, the opening shall be promptly guarded by a railing, temporary cover, or other acceptable temporary barrier to prevent an accidental fall through the opening and to protect employees working in the manhole from foreign objects entering the manhole.

(b) When work is to be performed on underground plant, the immediate foreman in charge and the craftsman assigned to do the work shall make a complete evaluation of the work location in regard to the hazards that are created or that could exist prior to beginning the work in underground plant.

(c) The immediate foreman and the craftsman responsible for the job completion shall be in agreement of the proper method of eliminating or reducing any hazards that are present or could be caused by the location of the work site, before the job proceeds.

(2) Requirements prior to entry of manholes and unvented vaults.

(a) The internal atmosphere shall be tested for combustible gas.

(b) Mechanical forced air ventilation shall be in operation at all times when workers are required to be in the manhole.

(c) The mechanical forced air equipment provided shall be of a quantity to replace the exhausted air and shall be tempered when necessary.

(d) Ventilation equipment shall be designed in such a manner that workers will not be subjected to excessive air velocities.

(3) Joint power and telecommunication manholes. While work is being performed in a manhole occupied jointly by an electric utility and a telecommunication utility, an employee with basic first aid training shall be available in the immediate vicinity to render emergency assistance as required. This employee is not to be precluded from occasionally entering a manhole to provide assistance other than in an emergency. The requirement of WAC 296-32-340(3) does not preclude a qualified employee, working alone, from entering for brief periods of time, a manhole where energized cables or equipment are in service, for the purpose of inspection, housekeeping, taking readings, or similar work if such work can be performed safely.

(4) Ladders.

(a) Ladders shall be used to enter and exit manholes exceeding four feet in depth.

(b) Metal manhole ladders shall be free of structural defects and free of accident hazards such as sharp edges and burrs. The metal shall be protected against corrosion unless inherently corrosion-resistant.

(c) These ladders may be designed with parallel side rails, or with side rails varying uniformly in separation along the length (tapered) or with side rails flaring at the base to increase stability.

(d) The spacing of rungs or steps shall be on 12-inch centers.

(e) Connections between rungs or steps and side rails shall be constructed to ensure rigidity as well as strength.

(f) Rungs and steps shall be corrugated, knurled, dimpled, coated with skid-resistant material, or otherwise treated to minimize the possibility of slipping.

(g) Ladder hardware shall meet the ladder's component parts and shall be of a material that is protected against corrosion unless inherently corrosion-resistant. Metals shall be so selected as to avoid excessive galvanic action.

(5) Flames. When open flames must be used in manholes, the following precautions shall be taken to protect against the accumulation of combustible gas:

(a) A test for combustible gas shall be made immediately before using any open flame device, and

(b) A fuel tank (e.g., acetylene) may not be in the manhole unless in actual use.

[Order 76-38, § 296-32-340, filed 12/30/76; Order 75-41, § 296-32-340, filed 12/19/75.]

WAC 296-32-350 Microwave transmission. (1) Eye protection. Employers shall insure that employees do not look into an open waveguide which is connected to an energized source of microwave radiation.

(2) Hazardous area. Accessible areas associated with microwave communication systems where the electromagnetic radiation level exceeds the radiation protection guide given in WAC 296-62-09005 shall be posted as described in that section. The lower half of the warning symbol shall include the following:

Radiation in this area may exceed hazard limitations and special precautions are required. Obtain specific instruction before entering.

(3) Protective measures. When an employee works in an area where the electromagnetic radiation exceeds the radiation protection guide, the employer shall institute measures that insure that the employee's exposure is not greater than that permitted by the radiation guide. Such measures shall include, but not be limited to those of an administrative or engineering nature or those involving personal protective equipment.

[Order 76-38, § 296-32-350, filed 12/30/76; Order 75-41, § 296-32-350, filed 12/19/75.]

WAC 296-32-360 Tree trimming--Electrical hazards. (1) General.

(a) Employees engaged in pruning, trimming, removing, or clearing trees from lines shall be required to consider all overhead and underground electrical power conductors to be energized with potentially fatal voltages, never to be touched (contacted) either directly or indirectly.

(b) Employees engaged in line-clearing operations shall be instructed that:

(i) A direct contact is made when any part of the body touches or contacts an energized conductor, or other energized electrical fixture or apparatus.

(ii) An indirect contact is made when any part of the body touches any object in contact with an energized electrical conductor, or other energized fixture or apparatus.

(iii) An indirect contact can be made through conductive tools, tree branches, truck equipment, or other objects, or as a result of communications wires, cables, fences, or guy wires being accidentally energized.

(iv) Electric shock will occur when an employee, by either direct or indirect contact with an energized conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself. Simultaneous contact with two energized conductors will also cause electric shock which may result in serious or fatal injury.

(c) Before any work is performed in proximity to energized conductors, the system operator/owner of the energized conductors shall be contacted to ascertain if he knows of any hazards associated with the conductors which may not be readily apparent. This rule does not apply when operations are performed by the system operator/owner.

(2) Working in proximity to electrical hazards.

(a) Employers shall ensure that a close inspection is made by the employee and by the foreman or supervisor

in charge before climbing, entering, or working around any tree, to determine whether an electrical power conductor passes through the tree, or passes within reaching distance of an employee working in the tree. If any of these conditions exist either directly or indirectly, an electrical hazard shall be considered to exist unless the system operator/owner has caused the hazard to be removed by deenergizing the lines, or installing protective equipment.

(b) Only employees or trainees, familiar with the special techniques and hazards involved in line clearance, shall be permitted to perform the work if it is found that an electrical hazard exists.

(c) During all tree working operations aloft where an electrical hazard of more than 750 volts exists, there shall be a second employee or trainee qualified in line clearance tree trimming within normal voice communication.

(d) Where tree work is performed by employees qualified in line-clearance tree trimming and trainees qualified in line-clearance tree trimming, the clearances from energized conductors given in Table 2 shall apply.

TABLE 2

Minimum Working Distances From Energized Conductors For Line-Clearance Tree Trimmers and Line-Clearance Tree-Trimmer Trainees

Voltage Range (Phase to Phase) (kilovolts)	Minimum Working Distance
2.1 to 15.0	2 ft. 0 in.
15.1 to 35.0	2 ft. 4 in.
35.1 to 46.0	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121.0	3 ft. 4 in.
138.0 to 145.0	3 ft. 6 in.
161.0 to 169.0	3 ft. 8 in.
230.0 to 242.0	5 ft. 0 in.
345.0 to 362.0	7 ft. 0 in.
500.0 to 552.0	11 ft. 0 in.
700.0 to 765.0	15 ft. 0 in.

(e) Branches hanging on an energized conductor may only be removed using insulated equipment by a qualified electrical worker.

(f) Rubber footwear, including lineman's overshoes, shall not be considered as providing any measure of safety from electrical hazards.

(g) Ladders, platforms, and aerial devices, including insulated aerial devices, shall not be brought in contact with an electrical conductor. Reliance shall not be placed on their dielectric capabilities.

(h) When an aerial lift device contacts an electrical conductor, the truck supporting the aerial lift device shall be considered as energized.

(3) Storm work and emergency conditions.

(a) Since storm work and emergency conditions create special hazards, only authorized representatives of the electric utility system operator/owner and not telecommunication workers may perform tree work in these situations where energized electrical power conductors are involved.

(b) When an emergency condition develops due to tree operations, work shall be suspended and the system operator/owner shall be notified immediately.

[Order 76-38, § 296-32-360, filed 12/30/76; Order 75-41, § 296-32-360, filed 12/19/75.]

WAC 296-32-370 Buried facilities--Communications lines and power lines in the same trench. [Reserved.]

Chapter 296-36 WAC
SAFETY STANDARDS--COMPRESSED AIR WORK

WAC

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WAC 296-36-010 Definitions. As used herein, the following terms mean:

(1) **Approved.** In compliance with a subsisting resolution of approval adopted by the department of labor and industries, division of safety.

(2) **Adequate.** The term when applied to materials, devices, structures, methods and procedures is synonymous with effective, equal, equivalent, firm, necessary, proper, safe, secure, substantial, sufficient, suitable and shall denote such kind and quality as a reasonable and prudent man experienced in compressed air work would require in order to provide safe working conditions for himself in the performance of the work.

(3) **Bulkhead.** An upright partition in tunnels separating compartments; a structure or partition capable of resisting pressure and separating a high pressure compartment from a low pressure compartment.

(4) **Caisson.** A structure in or by means of which excavation in a predominantly vertical direction is carried is carried on by persons working in a compressed air environment.

(5) **Compressed air worker.** A person performing any work or duty in compressed air. This term does not include divers.

(6) **Designated person.** A person selected and directed by an employer to perform a specified task or duty.

(7) **Director.** The director of the department of labor and industries, state of Washington.

(8) **Effective, equal, equivalent.** See (2), "adequate."

(9) **Firm.** See (2), "adequate."

(10) **Job.** The site, buildings, equipment and operations proximately associated with the work in compressed air.

(11) **Lock.** A chamber designed to facilitate the passage of men, materials and equipment from one ambient air pressure to another ambient air pressure.

(a) Emergency lock. A lock chamber designed to hold and to permit the quick passage of an entire shift of compressed air workers.

(b) Man lock. A lock chamber through which only men pass.

(c) Materials lock. A lock chamber designed and used normally for the passage of materials and equipment.

(d) Medical lock. A special lock chamber in which men suffering from decompression illness are placed for medical attention and treatment. Also used as a facility for preemployment physical examinations.

(12) **Necessary.** See (2), "adequate."

(13) **Owner.** The person, real or corporate, for whom the construction is being done.

(14) **Pressure.**

(a) Absolute. Gage pressure plus one atmosphere; viz, at sea level with a gage pressure of 30 pounds per square inch, the absolute pressure is 30+14.7=44.7 pounds per square inch.

(b) Ambient. That which encompasses on all sides, surrounds. Usually taken as the gage pressure.

(c) Atmospheric. A pressure of one atmosphere at sea level; the pressure of air at sea level, used as a unit of measurement, equivalent to 14.7 pounds per square inch. One atmosphere of pressure is also zero pounds per square inch gage pressure.

(d) Gage. That pressure measured by gage and indicating the pressure in pounds per square inch exceeding one atmosphere.

(e) Normal. Atmospheric pressure of 14.7 pounds per square inch at sea level or zero gage pressure.

(f) Total. Total pressure is a pressure of one atmosphere plus gage pressure. See (14)(a), "absolute."

(15) **Safe, secure.** See (2), "adequate."

(16) **Shaft.** An excavation made from the surface of the ground the longer of axis of which forms an angle with the horizontal greater than twenty degrees.

(17) **Shafting.** An air and watertight enclosure built in the roof of a caisson and extended upward until above the ground or water level.

(18) **Shall.** The word "shall" is always mandatory.

(19) **Substantial, sufficient, suitable.** See (2), "adequate."

(20) **Supervisor.** The supervisor of safety, department of labor and industries, state of Washington.

(21) **Tunnel.** The underground excavation for a passageway including all shafts and other openings leading to or from such excavation, and all places, buildings and equipment used in connection therewith. Tunnels which are administered as distinct units constitute separate jobs.

(22) **Working chamber.** The space or compartment in which the excavating is being done in compressed air.

[Rule I, filed 12/28/62; Part One (Definitions), filed 3/23/60.]

WAC 296-36-020 Responsibility. (1) **The owner's responsibility.** There shall be on every job involving work in compressed air an owner's representative who shall be experienced in compressed air work and who shall represent the owner in all matters of joint responsibility under the Washington labor laws and the standards of safety for the work. The owner shall advise the director of the department of labor and industries in writing of the name and address of each such representative within 24 hours after starting work on the job.

(2) **The superintendent.** There shall be on every job, while work in compressed air is in progress, a superintendent experienced in compressed air work representing the employer of compressed air workers and who shall be in full charge of the job. The employer shall advise

the director of the department of labor and industries in writing of the name and address of each such superintendent within 24 hours after starting work on the job.

(3) **Employees' responsibilities.** Every employee shall be responsible for carrying out all rules which immediately concern or affect his conduct and he shall use the safety devices and means furnished for his protection.

[Rules (Part II A, B, and C), filed 12/28/62; § 22, filed 3/23/60.]

WAC 296-36-030 General operating requirements--General duty to provide safety. Every reasonable precaution shall be taken to insure the safety of the workmen whether provided herein or not.

[Rules (Part III A), filed 12/28/62.]

WAC 296-36-035 General operating requirements--Safety miner. (1) A safety miner shall be selected by the crew on each shift. He shall have at least five years' experience as a practical miner and shall be the holder of an unexpired first-aid certificate from the Red Cross, U.S. Bureau of Mines, or the department of labor and industries. His duties shall be to check conditions to eliminate common work hazards such as loose rock, faulty timbers, poor rails, insufficient lighting, defective ladders and scaffolds, fan pipes, firing lines and other equipment directly related to the work of a miner. If such defects are found he shall immediately report the same to the superintendent.

(2) It shall be the duty of the superintendent, upon ascertaining such defects or hazards, to take immediate steps to remedy the same in compliance with the rules hereinafter set forth. A record of inspections made on each operation shall be kept on file and a copy thereof shall be submitted to the safety division of the department of labor and industries.

(3) In the event that disagreement arises out of the interpretation of these rules, then the question shall be referred to the division of safety of the department of labor and industries for its decision in accordance with the laws of the state, the safety standards, or rules and regulations issued hereunder, and a decision thus rendered shall be binding.

[Rules (Part III B), filed 12/28/62; § 15, filed 3/23/60.]

WAC 296-36-040 General operating requirements--Maintenance. All machinery, equipment, appliances, materials, structures and places on the job shall at all times be maintained in a safe condition and in good repair. Every person observing any defects shall immediately advise his immediate or higher superior.

[Rules (Part III C), filed 12/28/62; Rule 2203, § 22, filed 3/23/60.]

WAC 296-36-045 General operating requirements--Daily inspection. While work in compressed air is in progress, a competent person designated by the superintendent shall make a regular inspection at least once every day of all machinery, equipment, appliances, structures and places. Immediately upon discovery of any defect, he shall report the same in writing on forms provided by the state department of labor and industries to the person present in charge of the job. A copy of the report shall be sent immediately to the safety division of the department of labor and industries.

[Rules (Part III D), filed 12/28/62.]

WAC 296-36-050 General operating requirements--Maximum permissible pressure. No person shall be subjected to pressure exceeding 50 pounds per square inch gage except in case of emergency.

[Rules (Part III E), filed 12/28/62; § 1, filed 3/23/60.]

WAC 296-36-055 General operating requirements--Temperature in working chamber. Every effort shall be made by the best available means to prevent the wet bulb temperature exceeding 80 degrees F. A wet bulb thermometer, in good working order, shall be provided in every working chamber.

[Rules (Part III F), filed 12/28/62; § 20, Rule 2006, filed 3/23/60.]

WAC 296-36-060 General operating requirements--Bracing of working chamber, shafts and passageways. The working chamber, shafts and passageways of tunnels and caissons shall be provided with bracing as may be necessary to safely resist any superimposed loads or any forces which may cause excessive deformation of the walls.

[Rules (Part III G), filed 12/28/62; § 19, filed 3/23/60.]

WAC 296-36-065 General operating requirements--Communication. A telephone intercommunication system ready for use at all times shall be maintained between the working chamber, the power house, the source of compressed air, the place of compressed air control, the first-aid room and the superintendent's office.

Exception: Where the working chamber of a caisson is less than 150 square feet in area, such system shall be maintained between the working chamber, outside the lock and the place of compressed air control or the superintendent's office.

[Rules (Part III H), filed 12/28/62; § 8, filed 3/23/60.]

WAC 296-36-070 General operating requirements--Liquor. No person under the influence of intoxicating liquor shall be permitted to enter upon the job; nor shall any person carry any liquor on the job.

[Rules (Part III I), filed 12/28/62; § 24, Rule 2402, filed 3/23/60.]

WAC 296-36-075 General operating requirements--Identification badge. Every compressed air worker employed in the work shall wear an identification badge furnished by the employer both on and off the job. The badge shall be of durable plastic designed to be worn next to the body. The badge shall state that the wearer is employed as a compressed air worker, shall bear the address and telephone number of the medical lock, and shall contain instructions that in case of an emergency of unknown or doubtful cause or illness, the wearer shall be rushed to the medical facilities and not to a hospital.

[Rules (Part III J), filed 12/28/62; § 24, Rule 2412, filed 3/23/60.]

WAC 296-36-080 General operating requirements--Notification of civil authorities, hospitals, etc. When workmen are employed in compressed air, the owner shall see that all general hospitals, city and county health departments, local medical societies, police and fire rescue, and the county sheriff in the locality are acquainted with the fact that such work is being undertaken. These authorities and organizations shall be furnished with the names, addresses and telephone numbers of the designated medical officers as well as the location and telephone number of the medical lock. The same civil authorities shall be further notified when compressed air operations on the site are completed.

[Rules (Part III K), filed 12/28/62.]

WAC 296-36-085 General operating requirements--Instructions to be posted. The following instructions as well as supplemental instructions deemed advisable by the medical officer for the guidance of compressed air workers shall be printed and conspicuously posted in the change house and in the man locks:

(1) Never go on shift with an empty stomach.

(2) Avoid all alcoholic liquors.

(3) Eat moderately.

(4) Sleep at least seven hours daily.

(5) Take extra outer clothing into the tunnel when going on shift and wear it during decompression to avoid chilling during that period.

(6) Take a warm bath after each shift.

(7) Do not give men, suffering from compressed air illness, any intoxicating liquor.

(8) After you have had a cold, or if your ears are uncomfortable, or if you do not feel well for any reason, report at once to the medical lock for a checkup.

(9) If you are taken sick away from the plant, communicate at once with the physician-in-charge, Dr. ----------, telephone ----------.

(10) Wear your identification badge so it will be known what to do with you in an emergency.

(11) See that you are reexamined as required by the rules.

(12) Proper decompression means safety and freedom from compressed air illness.

(13) No person shall smoke or carry lighted smoking materials in compressed air. No matches, mechanical or chemical igniters will be permitted in the working chamber except those necessary for welding or flame cutting operations.

It shall be the duty and responsibility of each employee to observe and abide by the posted instructions and regulations.

[Rules (Part III L), filed 12/28/62; Rule 2204, filed 3/23/60.]

WAC 296-36-100 Compression and decompression of workmen--General. Subject to subsections 1-5 below, compression and decompression of workmen shall be carried out in accordance with the rules hereinafter prescribed:

(1) Compression or decompression may be carried out in accordance with such alternative regulations as are approved by the state department of labor and industries in writing.

(2) Except in an emergency, no workman shall be compressed to a pressure exceeding 50 pounds per square inch gage unless regulations for the decompression of such workman have been approved under the foregoing paragraph of this rule.

(3) The monograph "Decompression sickness and its prevention among compressed air workers" prepared by Gerald J. Duffner, M.D. (Captain, Medical Corps, U.S. Navy) and dated 6 November 1962, establishes the criteria for and shall be the guide in the determination of decompression methods and procedures and the preparation of decompression tables. Copies of the monograph are available from the supervisor of safety, department of labor and industries, state of Washington.

(4) A special low-pressure decompression chamber of sufficient size to accommodate the entire force of workmen being decompressed at the end of a shift shall be provided under the following circumstances:

Excepting the infrequent, occasional or emergency condition, when any regularly established routine term or schedule of work includes a working period requiring a total time of decompression exceeding seventy-five minutes, the special low-pressure decompression chamber shall be provided and shall be used as a facility to accomplish the final stage or phase of decompression. The special chamber shall conform with and shall be operated in accordance with sections WAC 296-36-130 and 296-36-120(2) example No. 2 respectively.

(5) When a workman has, within the immediately preceding period of 8 hours, been exposed to a pressure greater than 13 pounds per square inch gage and has to be compressed in a man lock other than the lock in which he was last decompressed, he shall, before compression, produce to the lock attendant written particulars signed by the lock attendant of the lock where he was last decompressed indicating his last working period. For the purposes of these regulations, the term "working period" shall mean the period or the sum of the periods during which, since last subject to ordinary atmospheric pressure for at least 8 consecutive hours, a workman has been under pressure in a working chamber or chambers; the written particulars shall be specific in stating the length of time the workman was exposed to compressed air, the gage pressure to which he was subjected, the schedule of decompression used, the total length of time devoted to decompression procedures and the hour at which decompression was completed. As soon as practicable, all data shall be entered in the prescribed register or log at the lock where he is compressed and the data shall, as soon as practicable, be communicated to the attendant at any other lock from which the workman is liable to return to the open air.

[Rules (Part IV A), filed 12/28/62; § 2, filed 3/23/60.]

WAC 296-36-105 Compression and decompression of workmen--Compression. During the compression of workmen, the pressure shall not, in the first minute after

starting compression, be increased to more than 3 pounds per square inch gage. When the pressure of 3 pounds per square inch gage is reached, the pressure shall not be further increased until after the lapse of a period sufficiently long to enable the lock attendant to ascertain whether any workman in the man lock complains of discomfort. After the lapse of that period, the pressure shall not be increased at a rate faster than 10 pounds per square inch gage per minute and a pause similar to that provided at 3 pounds per square inch gage shall also be provided at a pressure not exceeding 7 pounds per square inch gage. In all instances the pressure shall be increased gradually so as to insure, as far as practicable, that no workman suffers discomfort. If a workman complains of discomfort, and such complaint is signified to the lock attendant, any compression then proceeding shall be immediately stopped, and, unless the workman who has complained of the discomfort reports within 5 minutes that the discomfort has ceased and such report is conveyed to the lock attendant, the lock attendant shall without further delay gradually reduce the pressure in the lock until the workman reports that the discomfort has ceased; but, if he does not so report, the pressure shall be reduced gradually to atmospheric pressure and the workman released from the lock.

[Rules (Part IV B), filed 12/28/62.]

WAC 296-36-110 Compression and decompression of workmen--Decompression--General. (1) **Working period.** The "working period" shall include the time or period or the sum of periods during which, since last subject to ordinary atmospheric pressure for at least 8 consecutive hours, a workman has been under pressure in a working chamber or chambers.

(2) **Work pressure.** The "work pressure" means the highest pressure to which the workman has been exposed in the course of his working period: *Provided*, That,

(a) Sudden and exceptional variations of pressure involving excess pressure for not more than 15 minutes may be disregarded;

(b) Where, during the whole of his working period a workman about to be decompressed has been in a working chamber in which (as in tidal waters) the pressure has been gradually varied by more than 5 pounds per square inch in the course of that period, the work pressures shall be the mean of the pressures half way through that period and at the end of it.

(3) **Decompression required.** No person employed in compressed air shall be permitted to pass from the place in which the work is being done to atmospheric pressure, except after decompression in accordance with the procedures hereinafter established.

[Rules (Part IV C), filed 12/28/62; §§ 1 and 2, filed 3/23/60.]

WAC 296-36-115 Compression and decompression of workmen--Method and procedure. Decompressions shall be accomplished in accordance with the following methods and procedures:

(1) **Normal condition.** A normal condition is one during which exposure to compressed air is limited to a single continuous "working period" followed by a single decompression in any given 24 hour period; the total time of exposure to compressed air during the single continuous "working period" is not interrupted by exposure to normal atmospheric pressure; and a second exposure to compressed air does not occur until at least 8 consecutive hours of exposure to normal atmospheric pressure has elapsed since the workman has been under pressure in a working chamber. Decompression for normal condition shall be in accordance with the decompression tables.

(2) **Multiple exposures or emergency conditions.** The appointed physician shall be responsible for the preparation and establishment of methods and procedures of decompression applicable to multiple exposures and emergency conditions. The decompression times and stages shall be calculated and the methods and procedures determined and placed into effect in accordance with the instructions contained in the monograph "Decompression sickness and its prevention among compressed air workers" referred to in WAC 296-36-100(3).

[Rules (Part IV D), filed 12/28/62.]

WAC 296-36-120 Compression and decompression of workmen——Decompression tables. (1) **Explanation.**

(a) The decompression tables are computed for working chamber pressures from 14 to 50 pounds per square inch gage inclusive by 2 pound increments and for exposure times for each pressure extending from 1/2 to over 8 hours inclusive. Decompressions will be conducted by two or more stages with a maximum of 4 stages, the latter for a working chamber pressure of 40 pounds per square inch gage or over.

(b) Stage 1, consists of a reduction in ambient pressure ranging from 10 to a maximum of 16 pounds per square inch but in no instance will the pressure be reduced below 4 pounds at the end of stage 1. This reduction in pressure in stage 1 will always take place at a rate of 5 pounds per minute.

(c) Further reduction in pressure will take place during stage 2 and subsequent stages as required at a slower rate but in no event at a rate greater than one pound per minute.

(d) Decompression table No. 1 indicates in the body of the table the total decompression time in minutes for various combinations of working chamber pressure and exposure time.

(e) Decompression table No. 2 in several sheets indicates for the same various combinations of working chamber pressure and exposure time the following:

(i) The number of stages required;

(ii) The reduction in pressure and the terminal pressure for each required stage;

(iii) The time in minutes through which the reduction in pressure is accomplished for each required stage;

(iv) The pressure reduction rate in minutes per pound for each required stage;

Important note: The pressure reduction in each stage is accomplished at a uniform rate. Do not interpolate between values shown on the tables. Use the next higher value of working chamber pressure or exposure time

should the actual working chamber pressure or the actual exposure time, respectively, fall between those for which calculated values are shown in the body of the tables.

(2) **Examples.**

(a) Example No. 1. 4 hour working period at 20 pounds gage.

Decompression table No. 1.
20 pounds for 4 hours,
Total decompression time 43 minutes

Decompression table No. 2.

Stage 1
Reduce pressure from 20 pounds to 4 pounds at the uniform rate of 5 pounds per minute. Elapsed time stage 1:

$$\frac{16}{5} = 3 \text{ minutes}$$

Stage 2 (final stage)
Reduce pressure at a uniform rate from 4 pounds to zero pounds gage over a period of 40 minutes.
Rate = 0.10 pounds per minute or 10.00 minutes per pound
Stage 2 (final) elapsed time 40 minutes

Total time 43 minutes

(b) **Example No. 2.** 5 hour working period at 24 pounds gage

Decompression table No. 1
24 pounds for 5 hours
Total decompression time 117 minutes

Decompression table No. 2

Stage 1

Reduce pressure from 24 pounds to 8 pounds at the uniform rate of 5 pounds per minute
Elapsed time stage 1,

$$\frac{16}{5} = 3 \text{ minutes}$$

Stage 2
Reduce pressure at a uniform rate from 8 pounds to 4 pounds over a period of 4 minutes.
Rate, 1 pound per minute
Elapsed time, stage 2 4 minutes

Transfer men to special decompression chamber maintaining the 4 pound pressure during the transfer operation

Stage 3 (Final stage)
In the special decompression chamber reduce the pressure at a uniform rate from 4 pounds to zero pounds gage over a period of 110 minutes.
Rate, 0.037 pounds per minute or 27.5 minutes per pound
Stage 3 (final stage) Elapsed time 110 minutes

Total time 117 minutes

(3)

DECOMPRESSION TABLE NO. 1

Work Pressure	Total Decompression Time – Minutes										
	Working Period Hours										
psig	1/2	1	1–1/2	2	3	4	5	6	7	8	Over 8
0–14	6	6	6	6	6	6	6	6	16	16	32
16	7	7	7	7	7	7	17	33	48	48	63
18	7	7	7	3	11	17	48	63	63	73	87
20	7	7	8	15	15	43	63	73	83	103	113
22	9	9	16	24	38	68	93	103	113	128	133
24	11	12	23	27	52	92	117	122	127	137	151
26	13	14	29	34	69	104	126	141	142	142	163
28	15	23	31	41	98	127	143	153	153	165	183
30	17	28	38	62	105	143	165	168	173	188	204
32	19	35	43	85	126	163	178	193	203	213	226
34	21	39	58	98	151	178	195	218	223	233	248
36	24	44	63	113	170	198	223	233	243	253	273
38	28	49	73	128	178	203	223	238	253	263	278
40	31	49	84	143	183	213	233	248	258	268	288
42	37	56	102	144	189	215	245	260	263	268	293
44	43	64	118	154	199	234	254	264	269	269	293
46	44	74	139	171	214	244	269	274	289	299	318
48	51	89	144	189	229	269	299	309	319	319	–
50	58	94	164	209	249	279	309	329	–	–	–

(4)

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage No.	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
			From	To			
psig	Hours				Minutes	Min/Pound	Minutes
14	1/2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	1	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	1–1/2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	2	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	3	1	14	4	2	0.20	
		2	4	0	4	1.00	6

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	4	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	5	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	6	1	14	4	2	0.20	
		2	4	0	4	1.00	6
	7	1	14	4	2	0.20	
		2	4	0	14	3.50	16
	8	1	14	4	2	0.20	
		2	4	0	14	3.50	16
	Over 8	1	14	4	2	0.20	
		2	4	0	30	7.50	32
16	1/2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	3	1	16	4	3	0.20	
		2	4	0	4	1.00	7
	4	1	14	4	3	0.20	
		2	4	0	4	1.00	7
	5	1	14	4	3	0.20	
		2	4	0	14	3.50	17
	6	1	14	4	3	0.20	
		2	4	0	30	7.50	33
	7	1	14	4	3	0.20	
		2	4	0	45	11.25	48
	8	1	14	4	3	0.20	
		2	4	0	45	11.25	48
	Over 8	1	14	4	3	0.20	
		2	4	0	60	15.00	63
18	1/2	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	18	4	3	0.20	
		2	4	0	4	1.00	7
	2	1	18	4	3	0.20	
		2	4	0	5	1.25	8
	3	1	18	4	3	0.20	
		2	4	0	8	2.00	11

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	4	1	18	4	3	0.20	
		2	4	0	14	3.50	17
	5	1	18	4	3	0.20	
		2	4	0	45	11.25	48
	6	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	7	1	18	4	3	0.20	
		2	4	0	60	15.00	63
	8	1	18	4	3	0.20	
		2	4	0	70	17.50	73
	Over 8	1	18	4	3	0.20	
		2	4	0	84	21.00	87
20	1/2	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1	1	20	4	3	0.20	
		2	4	0	4	1.00	7
	1-1/2	1	20	4	3	0.20	
		2	4	0	5	1.25	8
	2	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	3	1	20	4	3	0.20	
		2	4	0	12	3.00	15
	4	1	20	4	3	0.20	
		2	4	0	40	10.00	43
	5	1	20	4	3	0.20	
		2	4	0	60	15.00	63
	6	1	20	4	3	0.20	
		2	4	0	70	17.50	73
	7	1	20	4	3	0.20	
		2	4	0	80	20.00	83
	8	1	20	4	3	0.20	
		2	4	0	100	25.00	103
	Over 8	1	20	4	3	0.20	
		2	4	0	110	27.50	113
22	1/2	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1	1	22	6	3	0.20	
		2	6	0	6	1.00	9
	1-1/2	1	22	6	3	0.20	
		2	6	0	13	2.20	16
	2	1	22	6	3	0.20	
		2	6	0	21	3.50	24
	3	1	22	6	3	0.20	
		2	6	0	35	5.85	38

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	4	1	22	6	3	0.20	
		2	6	0	65	10.83	68
	5	1	22	6	3	0.20	
		2	6	0	90	15.00	93
	6	1	22	6	3	0.20	
		2	6	0	100	16.67	103
	7	1	22	6	3	0.20	
		2	6	0	110	18.35	113
	8	1	22	6	3	0.20	
		2	6	0	125	20.80	128
	Over 8	1	22	6	3	0.20	
		2	6	0	130	21.70	133
24	1/2	1	24	3	3	0.20	
		2	8	4	4	1.00	
		3	4	0	4	1.00	11
	1	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	5	1.25	12
	1-1/2	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	16	4.00	23
	2	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	20	5.00	27
	3	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	45	11.25	52
	4	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	85	21.25	92
	5	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	110	27.50	117
	6	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	115	28.80	122
	7	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	120	30.00	127
	8	1	24	8	3	0.20	
		2	8	4	4	1.00	
		3	4	0	130	32.50	137
	Over 8	1	24	8	3	0.20	
		2	8	4	8	1.00	
		3	4	0	140	35.00	151
26	1/2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	4	1.00	13

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	1	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	5	1.25	14
	1-1/2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	20	5.00	29
	2	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	25	6.25	34
	3	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	60	15.00	69
	4	1	26	10	3	0.20	
		2	10	4	6	1.00	
		3	4	0	95	23.75	104
	5	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	115	28.80	126
	6	1	26	10	3	0.20	
		2	10	4	8	1.33	
		3	4	0	130	32.50	141
	7	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	8	1	26	10	3	0.20	
		2	10	4	9	1.50	
		3	4	0	130	32.50	142
	Over 8	1	26	10	3	0.20	
		2	10	4	30	5.00	
		3	4	0	130	32.50	163
28	1/2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	4	1.00	15
	1	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	12	3.00	23
	1-1/2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	20	5.00	31
	2	1	28	12	3	0.20	
		2	12	4	8	1.00	
		3	4	0	30	7.50	41
	3	1	28	12	3	0.20	
		2	12	4	10	1.25	
		3	4	0	85	21.20	98
	4	1	28	12	3	0.20	
		2	12	4	14	1.75	
		3	4	0	110	27.50	127

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	5	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	120	30.00	143
	6	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	130	32.50	153
	7	1	28	12	3	0.20	
		2	12	4	20	2.50	
		3	4	0	130	32.50	153
	8	1	28	12	3	0.20	
		2	12	4	32	4.00	
		3	4	0	130	32.50	165
	Over 8	1	28	12	3	0.20	
		2	12	4	50	6.25	
		3	4	0	130	32.50	183
30	1/2	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	4	1.00	17
	1	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	15	3.75	28
	1-1/2	1	30	14	3	0.20	
		2	14	4	10	1.00	
		3	4	0	25	6.25	38
	2	1	30	14	3	0.20	
		2	14	4	14	1.40	
		3	4	0	45	11.25	62
	3	1	30	14	3	0.20	
		2	14	4	17	1.70	
		3	4	0	85	21.20	105
	4	1	30	14	3	0.20	
		2	14	4	30	3.00	
		3	4	0	110	27.50	143
	5	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	165
	6	1	30	14	3	0.20	
		2	14	4	35	3.50	
		3	4	0	130	32.50	168
	7	1	30	14	3	0.20	
		2	14	4	45	4.50	
		3	4	0	130	32.50	178
	8	1	30	14	3	0.20	
		2	14	4	55	5.50	
		3	4	0	130	32.50	188
	Over 8	1	30	14	3	0.20	
		2	14	4	71	7.10	
		3	4	0	130	32.50	204

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
32	1/2	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	4	1.00	19
	1	1	32	16	3	0.20	
		2	16	4	12	1.00	
		3	4	0	20	5.00	35
	1-1/2	1	32	16	3	0.20	
		2	16	4	15	1.25	
		3	4	0	25	6.25	43
	2	1	32	16	3	0.20	
		2	16	4	22	1.83	
		3	4	0	60	15.00	85
	3	1	32	16	3	0.20	
		2	16	4	28	2.33	
		3	4	0	95	23.75	126
	4	1	32	16	3	0.20	
		2	16	4	40	3.33	
		3	4	0	120	30.00	163
	5	1	32	16	3	0.20	
		2	16	4	45	3.75	
		3	4	0	130	32.50	178
	6	1	32	16	3	0.20	
		2	16	4	60	5.00	
		3	4	0	130	32.50	193
	7	1	32	16	3	0.20	
		2	16	4	70	5.83	
		3	4	0	130	32.50	203
	8	1	32	16	3	0.20	
		2	16	4	80	6.67	
		3	4	0	130	32.50	213
	Over 8	1	32	16	3	0.20	
		2	16	4	93	7.75	
		3	4	0	130	32.50	226
34	1/2	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	4	1.00	21
	1	1	34	18	3	0.20	
		2	18	4	14	1.00	
		3	4	0	22	5.50	39
	1-1/2	1	34	18	3	0.20	
		2	18	4	25	1.80	
		3	4	0	30	7.50	58
	2	1	34	18	3	0.20	
		2	18	4	35	2.50	
		3	4	0	60	15.00	98
	3	1	34	18	3	0.20	
		2	18	4	43	3.10	
		3	4	0	105	26.25	151

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	4	1	34	18	3	0.20	
		2	18	4	55	3.93	
		3	4	0	120	30.00	178
	5	1	34	18	3	0.20	
		2	18	4	62	4.43	
		3	4	0	130	32.50	195
	6	1	34	18	3	0.20	
		2	18	4	85	6.07	
		3	4	0	130	32.50	218
	7	1	34	18	3	0.20	
		2	18	4	90	6.43	
		3	4	0	130	32.50	223
	8	1	34	18	3	0.20	
		2	18	4	100	7.15	
		3	4	0	130	32.50	233
	Over 8	1	34	18	3	0.20	
		2	18	4	115	8.23	
		3	4	0	130	32.50	248
36	1/2	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	5	1.25	24
	1	1	36	20	3	0.20	
		2	20	4	16	1.00	
		3	4	0	25	6.25	44
	1-1/2	1	36	20	3	0.20	
		2	20	4	30	1.88	
		3	4	0	30	7.50	63
	2	1	36	20	3	0.20	
		2	20	4	40	2.50	
		3	4	0	70	17.50	113
	3	1	36	20	3	0.20	
		2	20	4	52	3.25	
		3	4	0	115	28.75	170
	4	1	36	20	3	0.20	
		2	20	4	65	4.06	
		3	4	0	130	32.50	198
	5	1	36	20	3	0.20	
		2	20	4	90	5.63	
		3	4	0	130	32.50	223
	6	1	37	20	3	0.20	
		2	20	4	100	6.25	
		3	4	0	130	32.50	233
	7	1	36	20	3	0.20	
		2	20	4	110	6.88	
		3	4	0	130	32.50	243
	8	1	36	20	3	0.20	
		2	20	4	120	7.50	
		3	4	0	130	32.50	253

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	Over 8	1	36	20	3	0.20	
		2	20	4	140	8.75	
		3	4	0	130	32.50	273
38	1/2	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	9	1.50	28
	1	1	38	22	3	0.20	
		2	22	6	16	1.00	
		3	6	0	30	5.00	49
	1-1/2	1	38	22	3	0.20	
		2	22	6	20	1.25	
		3	6	0	50	8.34	73
	2	1	38	22	3	0.20	
		2	22	6	30	1.88	
		3	6	0	95	15.83	128
	3	1	38	22	3	0.20	
		2	22	6	35	2.19	
		3	6	0	140	23.35	178
	4	1	38	22	3	0.20	
		2	22	6	50	3.12	
		3	6	0	150	25.00	203
	5	1	38	22	3	0.20	
		2	22	6	55	3.44	
		3	6	0	165	27.50	223
	6	1	38	22	3	0.20	
		2	22	6	70	4.38	
		3	6	0	165	27.50	238
	7	1	38	22	3	0.20	
		2	22	6	85	5.32	
		3	6	0	165	27.50	253
	8	1	38	22	3	0.20	
		2	22	6	95	5.93	
		3	6	0	165	27.50	263
	Over 8	1	38	22	3	0.20	
		2	22	6	110	6.88	
		3	6	0	165	27.50	278
40	1/2	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	4	1.00	
		4	4	0	8	2.00	31
	1	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	5	1.25	
		4	4	0	25	6.25	49
	1-1/2	1	40	24	3	0.20	
		2	24	8	16	1.00	
		3	8	4	20	5.00	
		4	4	0	45	11.25	84

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	2	1	40	24	3	0.20	
		2	24	8	25	1.56	
		3	8	4	20	5.00	
		4	4	0	95	23.75	143
	3	1	40	24	3	0.20	
		2	24	8	30	1.88	
		3	8	4	30	7.50	
		4	4	0	120	30.00	183
	4	1	40	24	3	0.20	
		2	24	8	45	2.81	
		3	8	4	35	8.75	
		4	4	0	130	32.50	213
	5	1	40	24	3	0.20	
		2	24	8	47	2.94	
		3	8	4	53	13.25	
		4	4	0	130	32.50	233
	6	1	40	24	3	0.20	
		2	24	8	55	3.44	
		3	8	4	60	15.00	
		4	4	0	130	32.50	248
	7	1	40	24	3	0.20	
		2	24	8	65	4.06	
		3	8	4	60	15.00	
		4	4	0	130	32.50	258
	8	1	40	24	3	0.20	
		2	24	8	75	4.70	
		3	8	4	60	15.00	
		4	4	0	130	32.50	268
	Over 8	1	40	24	3	0.20	
		2	24	8	95	5.93	
		3	8	4	60	15.00	
		4	4	0	130	32.50	288
42	1/2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	6	1.00	
		4	4	0	12	3.00	37
	1	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	12	2.00	
		4	4	0	25	6.25	56
	1-1/2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	23	3.83	
		4	4	0	60	15.00	102
	2	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	30	5.00	
		4	4	0	95	23.75	144
	3	1	42	26	3	0.20	
		2	26	10	16	1.00	
		3	10	4	50	8.34	
		4	4	0	120	30.00	189

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	4	1	42	26	3	0.20	
		2	26	10	17	1.06	
		3	10	4	65	10.83	
		4	4	0	130	32.50	215
	5	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	85	14.18	
		4	4	0	130	32.50	245
	6	1	42	26	3	0.20	
		2	26	10	27	1.69	
		3	10	4	100	16.67	
		4	4	0	130	32.50	260
	7	1	42	26	3	0.20	
		2	26	10	30	1.88	
		3	10	4	100	16.67	
		4	4	0	130	32.50	263
	8	1	42	26	3	0.20	
		2	26	10	35	2.19	
		3	10	4	100	16.67	
		4	4	0	130	32.50	268
	Over 8	1	42	26	3	0.20	
		2	26	10	60	3.75	
		3	10	4	100	16.67	
		4	4	0	130	32.50	293
44	1/2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	8	1.00	
		4	4	0	16	4.00	43
	1	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	20	2.50	
		4	4	0	25	6.25	64
	1-1/2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	27	3.38	
		4	4	0	72	18.00	118
	2	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	40	5.00	
		4	4	0	95	23.75	154
	3	1	44	23	3	0.20	
		2	28	12	16	1.00	
		3	12	4	60	7.50	
		4	4	0	120	30.00	199
	4	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	85	10.62	
		4	4	0	130	32.50	234
	5	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	105	13.13	
		4	4	0	130	32.50	254

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	6	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	115	14.38	
		4	4	0	130	32.50	264
	7	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	8	1	44	28	3	0.20	
		2	28	12	16	1.00	
		3	12	4	120	15.00	
		4	4	0	130	32.50	269
	Over 8	1	44	28	3	0.20	
		2	28	12	40	2.50	
		3	12	4	120	15.00	
		4	4	0	130	32.50	293
46	1/2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	10	1.00	
		4	4	0	15	3.75	44
	1	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	25	2.50	
		4	4	0	30	7.50	74
	1-1/2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	35	3.50	
		4	4	0	85	21.20	139
	2	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	47	4.70	
		4	4	0	105	26.25	171
	3	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	65	6.50	
		4	4	0	130	32.50	214
	4	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	95	9.50	
		4	4	0	130	32.50	244
	5	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	120	12.00	
		4	4	0	130	32.50	269
	6	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	125	12.50	
		4	4	0	130	32.50	274
	7	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	140	14.00	
		4	4	0	130	32.50	289

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
		Stage	Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	No.	From	To	Minutes	Min/Pound	Minutes
	8	1	46	30	3	0.20	
		2	30	14	16	1.00	
		3	14	4	150	15.00	
		4	4	0	130	32.50	299
	Over 8	1	46	30	3	0.20	
		2	30	14	25	1.56	
		3	14	4	160	16.00	
		4	4	0	130	32.50	318
48	1/2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	12	1.00	
		4	4	0	20	5.00	51
	1	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	35	2.92	
		4	4	0	35	8.75	89
	1-1/2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	45	3.75	
		4	4	0	80	20.00	144
	2	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	60	5.00	
		4	4	0	110	27.50	189
	3	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	90	7.50	
		4	4	0	120	30.00	229
	4	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	120	10.00	
		4	4	0	130	32.50	269
	5	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	140	11.67	
		4	4	0	130	32.50	299
	6	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	160	13.33	
		4	4	0	130	32.50	309
	7	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319
	8	1	48	32	3	0.20	
		2	32	16	16	1.00	
		3	16	4	170	14.17	
		4	4	0	130	32.50	319
50	1/2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	14	1.00	
		4	4	0	25	6.25	58

DECOMPRESSION TABLE NO. 2

Working Chamber Pressure	Working Period	Decompression Data					
			Pressure Reduction Psig		Time in Stage	Pressure Reduction Rate	Total Time Decompress
psig	Hours	Stage No.	From	To	Minutes	Min/Pound	Minutes
	1	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	40	2.86	
		4	4	0	35	8.75	94
	1-1/2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	55	3.93	
		4	4	0	90	22.50	164
	2	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	70	5.00	
		4	4	0	120	30.00	209
	3	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	100	7.15	
		4	4	0	130	32.50	249
	4	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	130	8.58	
		4	4	0	130	32.50	279
	5	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	160	11.42	
		4	4	0	130	32.50	309
	6	1	50	34	3	0.20	
		2	34	18	16	1.00	
		3	18	4	180	12.85	
		4	4	0	130	32.50	329

DO NOT INTERPOLATE, USE NEXT HIGHER VALUE FOR CONDITIONS NOT COMPUTED

[Rules (Part IV E), filed 12/28/62; § 2, filed 3/23/60.]

WAC 296-36-125 Man locks. (1) **Use of man locks.** Except when prevented by an emergency, compressed air workers shall pass only through the man lock when passing into or out of a compressed air area. *Exception:* Caissons having a working area less than 150 square feet may use a combination material and man lock.

(2) **Size and capacity.** The head room in man locks shall be not less than 6 feet and their cubical content shall provide at least 30 cubic feet of air space for each person. The capacity shall be based upon such minimum space per person and shall be posted at the entrance to the lock. The posted capacity shall not be exceeded except in case of an emergency.

(3) **Equipment.** Each man lock shall be equipped with the following:

(a) A recording pressure gage, fixed to the exterior of the lock on the atmospheric pressure side, shall be installed for showing the rate of decompression. The gage dial and chart shall be of such size that the amount of rise or fall in air pressure within 5 minutes will be readily discernible. The gage shall be protected by a locked box from interference or damage. This requirement will not be necessary when working at pressures of 13 pounds per square inch or less.

(b) A clock or clocks suitably placed so that the man lock attendant and persons in the man lock can readily ascertain the time.

(c) A recording pressure gage whose chart shall be of sufficient size to register a legible record of variations in pressure within the working chamber. This gage shall be readily accessible to the lock attendant.

(d) Pressure gages which will indicate to the man lock attendant the pressure in the man lock and the pressure in each working chamber to which the man lock affords direct or indirect access and to persons in the man lock the pressure in the man lock.

(e) Valves to enable the lock attendant to reduce or cut off the supply of compressed air into the man lock.

(f) Valves and pipes in connection with the air supply and exhaust which shall be so arranged that the lock and pressure can be controlled from within and without.

(g) Effective means of verbal intercommunication between the man lock attendant and (1) persons in the man lock, (2) persons in any working chamber and (3) the air compressor plant, and also some means to enable persons in the lock to convey visible or other nonverbal signals to the lock attendant.

(h) A glass bulls-eye in each end of the lock to permit observation of the occupants.

(4) **Seating facilities.** The seating facilities in man locks shall be so arranged as to provide a normal sitting posture without cramping. Seating space not less than 22 inches in width shall be provided per occupant. *Exception:* In caissons having a working area less than 150 square feet, portable seats shall be provided in the combination material and man lock.

(5) **Lighting and heating.** Every man lock shall be lighted by electricity. The lighting intensity shall be a minimum of 30 foot-candles as currently recommended for waiting rooms by the illuminating engineers society. It shall also be provided with a system of radiant (infra-red) heating using electricity, steam or hot water for heating the radiant surface. The radiant surface shall be so located and protected as to prevent thermal burns. The chamber shall be heated to a minimum dry bulb temperature of 70 degrees F.

(6) **Ventilation.** A minimum ventilation rate of 20 cubic feet per minute of standard air at the prevailing ambient pressure in the lock shall be provided for each occupant. In no event shall the carbon dioxide concentration be permitted to rise above 0.5 percent by volume.

(7) **Record of decompression.** Where the pressure in the working chamber is 13 pounds or more, a record of all persons passing into or out of the working chamber shall be kept by a lock attendant who shall be stationed at the low pressure side of the man lock. Such record shall show the period of stay in the working chamber and the length of time of each decompression. Such record shall be signed by the medical officer and shall be kept on the job subject to inspection by the director of the state department of labor and industries or his authorized representative.

(8) **Automatic controls.** Each man lock shall be equipped with a suitable automatic control which through taped programs or cams or similar apparatus shall automatically regulate compressions and decompressions. It shall also be equipped with a timing device and such manual control as will enable the lock attendant to override the automatic mechanism in an emergency.

[Rules (Part V A), filed 12/28/62; §§ 3 and 4, filed 3/23/60.]

WAC 296-36-130 Special decompression chamber. (1) **General.** The special low-pressure decompression chamber shall be provided for use when the nature of the work requires decompression times and procedures clearly within the scope of WAC 296-36-110(4).

(2) **Size and capacity.** The headroom in the special decompression chamber shall be not less than 7 feet and the cubical content shall provide at least 50 cubic feet of air space for each person. For each occupant there shall be provided 4 square feet of free walking area and 3 square feet of seating space exclusive of area required for lavatory and toilet facilities. The rated capacity shall be based on the stated minimum space per person and shall be posted at the chamber entrance. The posted capacity shall not be exceeded except in case of emergency.

(3) **Equipment.** Each special decompression chamber shall be equipped with the following:

(a) A clock or clocks suitably placed so that the attendant and the chamber occupants can readily ascertain the time;

(b) Pressure gages which will indicate to the attendant and to the chamber occupants the pressure in the chamber;

(c) Valves to enable the attendant to reduce or cut off the supply of compressed air into the chamber;

(d) Valves and pipes in connection with the air supply and exhaust arranged that the chamber pressure can be controlled from within and without;

(e) Effective means of verbal intercommunication between the attendant, occupants of the chamber and the air compressor plant;

(f) A glass bulls-eye at the entrance to permit observation of the chamber occupants.

(4) **Seating facilities.** Seating facilities in special decompression chambers shall be so arranged as to permit a normal sitting posture without cramping. Seating space not less than 18 inches by 24 inches in width shall be provided per occupant. Seat and back shall be padded or cushioned with a one-inch thickness of foam rubber or its equivalent.

(5) **Lighting and heating.** Lighting and heating shall comply with that for man locks, WAC 296-36-125(5).

(6) **Ventilation.** Ventilation shall comply with that for man locks, WAC 296-36-125(6).

(7) **Record of decompression.** Final stage decompression in the special chamber shall be part of the records required by WAC 296-36-125(7).

(8) **Automatic controls.** Special decompression chambers shall be equipped with automatic controls complying with WAC 296-36-125(8), for man locks.

(9) **Sanitation.** One toilet and one wash basin with hot and cold water in a screened or enclosed recess shall be provided for each 10 units of rated capacity as defined in WAC 296-36-130(2). An adequate supply of disposable towels, drinking water and disposable cups shall be provided. No refuse or discarded material of any kind shall be permitted to accumulate and the chamber shall be kept clean.

(10) **Location.** Where practicable the special decompression chamber shall be situated adjacent to the man lock on the atmospheric pressure side of the bulkhead. When located adjacent to the man lock a passageway shall be provided connecting the special chamber with the man lock to permit workmen in the process of decompression to move from the man lock to the special chamber without a reduction in the ambient pressure from that designated for the initial pressure of the final stage of decompression. The passageway shall be so arranged as to not interfere with the normal operation of the man lock nor with the release of the occupants of the special chamber to atmospheric pressure upon the completion of the decompression procedure.

In event that the special chamber is located remote from the man lock a means of pressurized transport shall be provided to move the men from the man lock to the special chamber without a reduction in the ambient pressure from that designated for the initial pressure of the final stage of decompression.

Under unusual circumstances or in an emergency and only with the express permission of the appointed physician, decanting procedures may be used to facilitate the movement of men at atmospheric pressure from the man lock to the special decompression chamber for the final stage of decompression. RECOMPRESSION OF THE MEN MUST TAKE PLACE WITHIN FIVE MINUTES IN THE SPECIAL CHAMBER. THE MEDICAL LOCK SHALL NOT BE USED FOR THE RECOMPRESSION.

(11) **Design.** The special decompression chamber and passageway or pressurized transport shall be designed for an operating pressure of 20 pounds per square inch gage pressure.

(12) **Fire protection.** All applicable provisions of WAC 296-36-190, fire prevention and fire fighting shall apply to special decompression chambers.

[Rules (Part V B), filed 12/28/62.]

WAC 296-36-132 Lock attendants. (1) Whenever any workman is in a man lock or in a working chamber to which the man lock affords direct or indirect access, each working man lock shall be in the charge of a competent lock attendant who shall perform no other duties except to operate the lock and shall be employed the same number of hours as the other employees working in compressed air. The lock attendant shall control the maximum rate of compressions and shall perform all decompressions except where such compressions and decompressions are automatically regulated, but in such case the lock attendant shall have means to determine the pressures within the lock and working chamber at any time, and shall have also a timing device and such

manual controls as will enable him to override the automatic mechanism in an emergency.

(2) Subject to the overall control by the lock attendant of the admission of compressed air into the lock, he may, if so authorized by the appointed physician, allocate to a competent person who is to be compressed in the lock, the duty to regulate from inside the lock the admission of compressed air, and duty to communicate to the lock attendant any complaint of discomfort by a workman in the lock and any report by that workman that the discomfort has ceased.

(3) Man lock attendants shall be under the direct supervision, control, discipline and training of the appointed physician and each man lock attendant shall be the holder of an unexpired first-aid certificate from the Red Cross, U.S. Bureau of Mines, or the Department of Labor and Industries. Lock attendants shall receive their wage payments directly from the head office of the employer and shall not be carried on or subject to the payroll procedures of the local office. A lock attendant shall not be relieved of his duties or discharged without consulting the appointed physician nor without the physician's assent.

[Rules (Part VI), filed 12/28/62; § 4, filed 3/23/60.]

WAC 296-36-135 Regulation of pressure and air quality in working areas--Gage tender. There shall at all times be a thoroughly experienced competent and reliable person on duty at the air control valves as a gage tender who shall regulate the pressure in the working areas. No gage tender shall be on duty more than 8 hours in any 24. During tunneling operations, one gage tender may regulate the pressure in not more than two headings provided that the gages and controls are all in one location. In caisson work there shall be a gage tender for each caisson.

[Rules (Part VII A), filed 12/28/62; Rule 303, filed 3/23/60.]

WAC 296-36-140 Regulation of pressure and air quality in working areas--Pressure monitoring. (1) **High pressure.** Every compressed air line used to maintain pressure in working areas shall have a pressure gage attached at a point in the immediate vicinity of the control valves to show the pressure on the high pressure side of the control valves. Such gages shall be so located and illuminated as to be easily read by the operator and shall be of such size and so graduated as to show clearly a change in pressure of one pound.

(2) **Back pressure.** Back pressure gages to show the pressure in the working areas shall be located on the low pressure side of the bulkhead, in the superintendent's office, at the air control valves and in the power house. Back pressure gages shall be maintained in accurate working order and shall be tested at least once every 24 hours and a record shall be kept of each such test. In addition to the foregoing back pressure gages, a continuous recording back pressure gage shall be installed to provide a record of variations and pressure in the working chamber. The record shall be kept in the superintendent's office and be available for inspection by the director of the state department of labor and industries.

Exception: Caissons having a net working areas less than 150 square feet shall have back pressure gages installed on the low pressure side of the caisson and at the air control valves.

[Rules (Part VII B), filed 12/28/62.]

WAC 296-36-145 Regulation of pressure and air quality in working areas--Air quality in working areas. (1) **Ventilation.** An automatic air quality monitoring system acceptable to the supervisor of the division of safety, department of labor and industries, shall be installed in the pressurized working chamber and shall at all times be maintained in proper working condition. The system shall provide continuous sampling and monitoring of the air and shall indicate by visual and audible alarm the presence of dangerous air contaminants in excess of the following:

Carbon monoxide	0.01%	100 ppm
Carbon dioxide	0.50%	5000 ppm
Oxides of nitrogen	0.0005%	5 ppm
Methane	0.25%	2500 ppm
Hydrogen sulphide	0.002%	20 ppm

The director in his discretion may change these concentrations to conform with good practices as recommended by the American Conference of Governmental Industrial Hygienists.

The system shall also indicate and give alarm at any time the oxygen content is less than 19.5 percent.

The system shall be so arranged that the visual and audible alarm will give warning in the working chamber and at the lock tender's station at the low pressure side of the locks.

In addition to the specific requirements contained in these standards of safety, the following rules contained in the safety standards for tunnels, shafts and subways shall apply:

WAC 296-70-070 Rock dust and WAC 296-70-080 Ventilation.

(2) **Protection against atmospheric containments:** The following rules contained in the safety standards for tunnels, shafts and subways shall apply: WAC 296-70-090 Protection against atmospheric containment.

[Rules (Part VII C), filed 12/28/62; § 25, filed 3/23/60.]

WAC 296-36-150 Air supply. (1) **Clean air.** Compressed air supplied to working area shall not contain quantities of harmful or offensive air contaminants exceeding the limits set forth hereinbefore.

(2) **Amount.** Nor less than 30 cubic feet per minute per man, measured at the prevailing working chamber pressure, of outside air shall be supplied to the working areas under pressure.

(3) **Supply lines.** In addition to the compressed air lines supplying working areas under pressure, there shall be a second such line of the same size and similarly equipped which shall be maintained ready for immediate use between the working chamber side of the bulkhead and the compressed air source in case of failure of the first line.

(4) **Point of discharge.** The point of discharge of the supply line in use shall be as close to the working face as is practicable and the discharge end of both supply lines shall be provided with a check valve.

(5) **Air outlet or exhaust line.** Air outlet lines from areas under pressure shall be properly located so that injurious gases may be promptly removed. Such lines shall be provided with suitable valves.

(6) **Air tools.** The high pressure air supplied for air-operated tools, equipment and appliances shall comply with the quality requirements contained in WAC 296-36-145, Air quality in working areas.

[Rules (Part VIII), filed 12/28/62; Rule 2009, filed 3/23/60.]

WAC 296-36-155 Compressor plant. (1) **Capacity.** The capacity, arrangement and number of compressors shall be sufficient to maintain the necessary pressure without overloading the equipment and to assure maintenance of such pressure in the working chamber during periods of breakdown or other emergency. The compressor installation shall be capable of delivering not less than 50 cubic feet per minute of ventilating air for each man in the working chamber at the prevailing working chamber pressure. Additional stand-by compressor units shall be installed in accordance with the following tabulation:

Normal installation at 50 C.F./Man/Min. units	Stand-by units	Total units	Percent rated total capacity of stand-by units divided by normal units
1	1	2	100
2	2	4	100
3	2	5	67
4	2	6	50
5	2	7	40

(2) **Sources of power.** Where the power is generated on the job there shall be a sufficient number of power units to maintain the necessary compressor operation.

(3) **Power feeders.** Where power is obtained from a public utility there shall be at least two feeders to the compressor plant. Each feeder shall have a capacity sufficient to carry the entire load and normal overload. The feeders shall run over separate routes in such a way that a breakdown of one feeder will not cause any interruption of power from the other feeder. Each feeder or service extension shall enter the compressor plant through a separate and independent opening.

(4) **Bus bar connections.** There shall be duplicate feeder bus bars at the compressor plant. Feeder connections to the bus bar shall be such that either feeder can feed to each bus bar separately or simultaneously to both bus bars. The electrical connections from the bus bars to the compressor shall be arranged in such a way as to insure continuous operation of the compressor plant, in spite of any breakdown of an individual feeder, bus bar or compressor unit.

(5) **Alternate sources of power.** Any combination of power either generated at the job or generated off the job as set forth above, and which complies with the above requirements is permitted.

(6) **Maintenance.** All equipment including reserve sources of power and reserve compressor equipment used to maintain pressure in working areas shall at all times be maintained in good repair and ready for use. All reserve equipment shall be periodically inspected and shall be operated for a period of one hour or more at least once in every week, except where there is danger of sudden flooding, in which case reserve equipment shall be operated at least one hour in every 24 hours. An ample supply of spare parts shall be kept on hand.

[Rules (Part IX), filed 12/28/62; § 12, filed 3/23/60.]

WAC 296-36-160 Personnel facilities. (1) **General.** There shall be provided on every job a change house which shall have a dressing room and separate spaces for each of the following: drying clothes, shower baths, toilet facilities and rest room with seating facilities and tables.

(2) **Maintenance.** The change house shall be kept clean throughout.

(3) **Dressing room.** The dressing room shall be provided with benches and a full length metal or other approved noncombustible locker with facilities for locking for each compressed air worker.

(4) **Clothes drying.** Facilities for drying clothing shall be installed and sufficient heat shall be provided to dry the clothing within 12 hours.

(5) **Toilet facilities.** One toilet and one urinal shall be provided for every 8 men or part thereof employed on each shift.

(6) **Shower baths.** Shower baths with hot and cold water shall be installed in the change house in sufficient number to provide one unit for every 8 men coming off shift.

(7) **Wash basins.** At least one wash basin with hot and cold running water or equivalent facilities at wash fountains shall be provided for every 8 men coming off shift.

(8) **Temperature.** A minimum temperature of 72 degrees F. shall be maintained in the dressing room, wash room and bathroom.

(9) **Coffee.** A sufficient supply of hot coffee, cream, milk and sugar shall be supplied to men working in compressed air at the termination of shifts and during rest periods. Coffee shall be heated by means other than direct steam. Coffee containers shall be kept clean and covered. Unless drinking cups are of the single service type, individual cups shall be sterilized after each use.

(10) **Eating space underground.**

(a) General. Suitable eating space shall be provided in the working chamber in the event that established working periods are of sufficient length to normally include a meal time interval. *Exception:* This requirement is not applicable to caisson work.

(b) Facilities.

(i) Space requirements. The space provided shall have a minimum head room of 6 feet 6 inches and a minimum area of 6 square feet shall be provided per person occupying the space at any one time.

The area shall be dry and clean, shall be lighted, heated and ventilated in accordance with WAC 296-36-125 (5) and (6), man locks.

(ii) Equipment. The space shall be equipped with tables and comfortable seating facilities providing seating space not less than 22 inches in width per occupant; disposable towels; washing facilities with hot and cold water or in lieu thereof acceptable dry-cleansing tissues; and space outside the immediate eating area for the removal and temporary storage of protective clothing. Portable equipment, acceptable to the supervisor of safety, department of labor and industries, which may be moved into the working chamber and removed therefrom, may be provided.

[Rules (Part X), filed 12/28/62; § 21, filed 3/23/60.]

WAC 296-36-165 Sanitation below ground. (1) **Toilet facilities.** At least one approved chemical toilet shall be provided in the working chamber. Such facilities shall be maintained in a sanitary condition and shall be used by the workers.

(2) **Housekeeping.** No refuse or discarded material of any kind shall be permitted to accumulate underground. The man lock shall be kept clean.

(3) **Drinking water.** An ample supply of clean and potable drinking water shall at all times be available in working areas. Where water is supplied in containers it shall be kept covered. The use of common drinking cups is prohibited.

[Rules (Part XI), filed 12/28/62; § 21, filed 3/23/60.]

WAC 296-36-170 Stairs and ladders. The following rules contained in the safety standards for tunnels, shafts and subways shall apply: WAC 296-70-110.

[Rules (Part XII), filed 12/28/62.]

WAC 296-36-175 Lighting and power. (1) **Type of installation.** All lighting underground shall be by electricity. Lighting and power facilities shall comply in materials and installation practice with WAC 296-70-180 and 296-70-190, lighting and electrical equipment as contained in safety standards for tunnels, shafts and subways.

(2) **Emergency lighting.** The lighting circuits shall be connected to two independent sources of power supply. In addition to the lighting circuit, adequate and sufficient portable electric emergency lights shall be provided and maintained for immediate use. These shall be readily accessible to all employees working underground.

(3) **Lamp sockets.** The exterior of all lamp sockets shall be of nonmetallic material and all sockets shall be of the weatherproof type.

(4) **Location of lamps.** Lamps shall be so placed that they cannot come into contact with combustible materials and so that a clear space is provided all around.

(5) **Lamp guards.** All lamps shall be protected with wire cage guards.

[Rules (Part XIII), filed 12/28/62; § 6, filed 3/23/60.]

WAC 296-36-180 Signal codes. Signal codes shall comply with WAC 296-70-150, signals and means of communication, of safety standards for tunnels, shafts and subways.

[Rules (Part XIV), filed 12/28/62.]

WAC 296-36-185 Explosives--Blasting. (1) **Storage and supply.** Explosives including detonators shall not be stored or kept underground. The supply for each blast shall be taken directly from above ground to the face and immediately loaded. All explosives remaining after loading a round shall be removed to the magazine before the leading wires are connected.

(2) **Explosives in air locks.** While explosives are being locked through a tunnel bulkhead, the detonators and explosives shall be placed at the opposite ends of the lock and no person, other than the lock tender and those persons necessary for carrying, shall be permitted in the lock. No other material or equipment shall be locked through with explosives.

Explosives and detonators shall be taken separately into caissons.

(3) **Carrying containers.** Explosives other than detonators shall be conveyed in a suitable covered wooden box painted red and provided with handles. Detonators shall be conveyed in a separate covered wooden box, painted red with a one-inch yellow stripe running horizontally entirely around the box. The box shall be provided with handles.

(4) **Blaster.** The blaster shall be a person designated by the superintendent and shall be in charge of all operations connected with preparations for blasting and shall fire all shots.

(5) **Duties of the blaster.** Before removing any explosives from the carrying containers, the blaster shall verify

(a) That the blasting switch is in "off" position and that its box is locked;

(b) That the "gap" in the blasting circuit is open; (Note: A gap of at least 5 feet on the incoming side of the switch, except during the firing operation, when connections at such gap are to be made by means of plugs, is required.)

(c) That the heading gang has been withdrawn to a safe distance or to a safe shelter, except such men from the gang as the blaster may direct to remain with him to assist in loading under his directions; and

(d) That all light and power circuits have been disconnected at a point not less than 100 feet from the place to be blasted. The blaster shall direct the loading of all holes and the making of the necessary connections in the blasting circuit; he shall sound a warning signal distinctly audible in any part of the working chamber, shield or any drift ahead of the shield where any person remaining would be exposed to injury from the blast.

(6) **Vacating blasting area.** All persons shall promptly vacate the blasting area when so directed by the blaster. When the blaster is satisfied that all persons have vacated the blasting area, he, alone, shall unlock the box that contains the blasting switch and fire the blast.

(7) **Return to blasting area.** No person shall return to the blasting area until the air in such area has been cleared of injurious concentrations of toxic fumes. The blaster shall be the first to return to the heading. He shall examine the effects of the blast and investigate the matter of possible misfires and he, alone, shall give the signal for the return of the workmen to the heading and for the restoration of light and power in the blasted area.

(8) **Hand lamps and cap lamps.** Electric hand lamps and cap lamps used by the blaster or his helpers or by any other person in the working chamber during the blasting operation shall be approved.

(9) **Blasting circuits.** All circuits used for blasting shall be ungrounded circuits. Damaged leading wires shall not be used.

[Rules (Part XV), filed 12/28/62; § 14, filed 3/23/60.]

WAC 296-36-190 Fire prevention and fire fighting. (1) **General.** Every building and every flammable structure above ground and all places underground shall be within easy range of fire fighting equipment, which shall at all times be maintained in proper working conditions and ready for use.

(2) **Smoking.** No person shall smoke or carry lighted smoking materials in compressed air. No matches, mechanical or chemical igniters will be permitted in the working chamber except those necessary for welding or flame cutting operations.

(3) **Welding or flame cutting.** While welding or flame cutting is being done in compressed air, a watchman with a fire hose or approved extinguisher shall stand by until such operation is completed. Acetylene shall not be used in compressed air at acetylene pressure exceeding 15 pounds per square inch gage, or 30 pounds per square inch absolute.

(4) **Fire hose.** Fire hose shall be at least 1-1/2 inches in nominal diameter; the water pressure shall at all times be adequate for efficient operation of the type of nozzle used; and the water supply shall be such as to insure an uninterrupted flow. Fire hose when not in use shall be so located or guarded to prevent injury thereto.

Every power house, compressor house and every building housing ventilating equipment shall be provided with at least one hose connection in the water line with the fire hose connected thereto. A fire hose shall be maintained within easy reach of structures of wood over or near shafts.

(5) **Shafts and caissons.** Every shaft and every caisson containing flammable material of any kind, either above or below ground, shall be provided with a water line and a fire hose connected thereto, so arranged that all points of the shaft or caisson are within easy reach of the hose stream.

(6) **Tunnels.** Every tunnel shall be provided with a water line extending into the working chamber and to within 100 feet of the working face. Such lines shall have hose outlets with 100 feet of fire hose properly attached and maintained as follows: One at the working face, one immediately inside of the bulkhead of the working chamber, and one immediately outside such bulkhead. In addition, hose outlets shall be provided at 200-foot intervals throughout the length of the tunnel and 100 feet of fire hose shall be attached to the outlet nearest to any location where flammable material is being kept or stored or where any flame is being used.

(7) **Fire extinguishers.** In addition to required fire hose protection, on every floor of every building used in connection with compressed air work, there shall be provided at least one extinguisher of adequate size approved for the class of hazard involved, except that extinguishers containing carbon tetrachloride or methyl bromide shall not be used. Extinguishers shall be so located as to be readily available and protected from damage.

[Rules (Part XVI), filed 12/28/62; § 7, filed 3/23/60.]

WAC 296-36-195 Special provisions for tunnels. (1) **Bulkheads.** The bulkheads separating the working chamber from areas of lower pressure shall be of sufficient strength to withstand safely the maximum pressure to which it may be subjected. Where there is a possibility of rapid flooding of the working chamber, such as might be present in subaqueous tunnels, the bulkhead shall be located sufficiently close to the face or shield to permit escape of the workers in case of an emergency. But in no case where there is such possibility shall such distance be more than 300 feet.

(2) **Safety curtain or screens.** Where danger of a blow or an in-rush of water exists in tunnels 12 feet or more in clear height, and the elevation of the top of the lining at the face and of the completed tunnel back to the emergency lock are such that a safety curtain will afford protection to the workman, a safety curtain shall be provided. It shall be located where it will afford the maximum of protection in case of an emergency but not impracticably close to the face.

Safety curtains shall be of incombustible material and shall be installed in the crown of the tunnel. They shall provide an airtight seal with the tunnel lining and shall be properly reinforced and braced as may be necessary. Curtains or screens shall be installed at right angles to the axis of the tunnel with the bottom edge horizontal. In tunnels up to and including 24 feet in inside clear height, the safety curtain shall extend down to the center line of the tunnel. In tunnels over 24 feet inside clear height, it shall extend at least 12 feet below the inside clearance line of the roof of the tunnel.

(3) **Walkways.** In tunnels 16 feet or more in diameter, containing safety curtains or screens, hanging walkways shall be provided from the face to the man lock and shall be installed as high in the tunnel as is practicable. Such walkway shall be installed above the tunnel floor and shall have at least 6 feet of head room above the walkway. A railing 42 inches high and a toe board shall be securely installed throughout the length of walkways on open sides. In areas under pressure, the walkways, stairways, and ladders including railings shall be of incombustible material.

(4) **Maintenance of walkways.** Walkways and the stairs or ladders leading thereto shall be at all times maintained clear, in good repair, and in a condition to carry safely the loads to which they may be subjected.

(5) **Ramps.** Walkways shall be provided with ramps under safety screens. Such ramps shall be provided with cleats.

(6) **Man lock and material lock.** Every tunnel shall have at least two locks in proper working condition, one of which shall be used as a material and equipment lock and the other used exclusively as a man lock.

(7) **Emergency man lock.** In subaqueous tunnels where space permits, there shall be in addition to the man lock and the material lock, an emergency man lock which shall be large enough to hold an entire heading shift and which shall be kept open toward the face and maintained ready for use at all times.

(8) **Location of locks.** Man locks and emergency locks shall be located as high in the tunnel as space will permit but the emergency lock shall be located in the crown of the tunnel.

(9) **Track safeties and brakes.** An automatic stop block or derailing device shall be provided at the top of every slope or incline greater than 3 percent. In addition, such a device shall be installed at a point not less than 150 feet nor more than 200 feet upgrade from any point where runaway cars may cause damage to the shield or air lock. A holding device shall be provided for cars used on inclines. Such device shall be set in the holding position during loading.

[Rules (Part XVII), filed 12/28/62; §§ 10 and 18, filed 3/23/60.]

WAC 296-36-200 Special provisions for caissons. (1) **Number of locks.** Every caisson shall have at least two locks, one of which shall be used exclusively as a man lock. *Exception:* Caissons having a working area less than 150 square feet may have a single or combined man and material lock.

(2) **Location of man locks.** The bottom of the lowest door opening of locks shall not be less than 3 feet above the water level being controlled by the use of compressed air.

(3) **Lock platforms.** All caisson locks located above ground shall be provided with an exterior platform not less than 42 inches wide with stairs or ladders leading thereto. The platform and stairs shall have a substantial handrail with midrail and the platform shall have toeboards at least 4 inches high.

(4) **Ladderways and stairways in man shafts or shafting.** Ladderways or stairways shall be provided and shall be kept clear and in good condition. Stairways shall be lighted at every landing and ladderways shall be lighted at 10-foot intervals with guarded incandescent lamps. Ladders and landings shall be of incombustible material. Pockets in the wall of the shaft shall not be used in lieu of ladders. In caissons having a working area more than 150 square feet, the man shafts shall be separated from the hoisting shaft by a barrier. Where the man shaft is separated from the hoisting shaft, the ladderways shall be provided with platform landings at intervals not exceeding 15 feet. In caissons having a working area less than 150 square feet, the ladder shall be recessed to prevent interference between the bucket and the ladder.

(5) **Hoisting.** No person shall ride on a loaded car, cage or bucket. Where the ladderway and hoistway are not separated by a barrier, no hoisting shall be done while any person is ascending or descending the ladder, nor shall any person enter the shaft while the hoisting conveyance is in motion. Standard warning signals shall be provided and shall be given and acknowledged to affect compliance with this provision.

(6) **Shoring.** Where the bottom of the excavation is below the cutting edge of the caisson and there is danger of a cave-in, the sides of the excavation shall be securely shored.

[Rules (Part XVIII), filed 12/28/62; § 17, filed 3/23/60.]

WAC 296-36-210 Medical supervision and medical and first-aid facilities--Medical supervision. (1) **Appointed physician.** Where workmen are employed in compressed air, their employer shall make arrangements for their medical supervision by one or more licensed physicians trained in the physical requirements and the medical aspects of compressed air work and the treatment of decompression illness. The employer shall arrange for medical examination of all workmen employed in compressed air at a suitable place or places by the appointed physician in accordance with these regulations. The appointed physician or physicians shall be immediately available in case of emergency or accident. Each appointed physician shall be physically qualified to subject himself to a compressed air environment.

(2) **Appointed physician's duties and responsibilities.**

(a) General. All matters on the job pertaining to the health of employees, treatment on the job of illness and injuries, special first-aid and nursing personnel or assistants, lock attendants, and medical and first-aid equipment shall be under the supervision of the appointed physician.

(b) He shall make all required physical examinations.

(c) He shall make and sign all required reports of such examinations using the forms provided by the department of labor and industries.

(d) He shall make at least one inspection on the job every day of all treatment records and the required decompression record and he shall inspect or inquire into conditions which may constitute a potential hazard to the health of any employee.

(3) **Certified medical attendant.** There shall be on every job a certified medical attendant trained to the satisfaction of the appointed physician in administering first aid on compressed air jobs, and who shall be in attendance in the first-aid room while work in compressed air is going on and at such other times as the physician may direct. The medical attendant shall be in personal charge of the administration of first aid and such other duties as physician may direct. Under no circumstances shall female medical attendants be subjected to a compressed air environment.

(4) **First-aid personnel.**

(a) The superintendent and every foreman and at least one additional designated person on each shift below ground shall be trained to the satisfaction of the appointed physician in administering first aid.

(b) Where more than 10 but less than 50 men are employed per shift underground, there shall be at least 2

such additional designated trained persons on the job and available on call.

(c) Where more than 50 men are employed per shift underground, the designated trained personnel shall include all shift bosses and time keepers in addition to those required in subsection (b) above.

(d) All designated first-aid personnel shall have in their possession current first-aid certificates acceptable to the department of labor and industries.

(5) **First-aid meetings.** All designated first-aid personnel shall meet at least once in each 3 months or oftener if directed by the physician for further first-aid instruction by the physician.

(6) **First-aid room and equipment.** The employer shall provide a first-aid room properly heated and maintained within 100 yards of the principal entrance to the underground work. It shall be equipped with a first-aid kit, medical supplies and equipment consisting of not less than the minimum requirements listed in the Safety standards for tunnels, shafts and subways, WAC 296-70-030, "Minimum first-aid requirements" supplemented by special equipment and supplies deemed necessary by the appointed physician.

(7) **First-aid equipment underground.** All the equipment and supplies which the appointed physician may deem necessary for first-aid underground shall be provided and maintained readily available in a suitable cabinet or cabinets. A list of the contents signed by the appointed physician shall be permanently attached to the inside of the cabinet door or cover. The cabinet shall be plainly marked with a red cross and the words "first aid."

In caissons, one such cabinet shall be conveniently located in the working chamber.

In tunnels where a bulkhead is installed, one such cabinet shall be located on each side of the bulkhead near the entrance to the man lock.

In tunnels having no bulkhead, one such cabinet shall be located within 100 yards of the working face.

[Rules (Part XIX A), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-215 Medical supervision and medical and first-aid facilities--Medical locks. (1) **Requirement and location.** When the pressure in a working chamber exceeds 13 pounds per square inch gage, a suitably constructed medical lock shall be provided and maintained and used solely for the treatment and examination of workmen working in compressed air. It shall be situated adjacent to a medical emergency room but separated therefrom to provide privacy for patient and doctor during treatment or examination.

(2) **Design and equipment.**

(a) The medical lock shall have not less than 6 feet of clear head room and shall consist of not less than two compartments so that the lock can be entered while under pressure. It shall be adequately ventilated, air conditioned, heated and lighted and be constructed and finished as to be readily kept in a clean and sanitary condition.

(b) The medical lock shall be designed for an operating pressure of 75 pounds per square inch gage pressure.

(c) It shall be equipped with pressure gages readily observed from inside and outside of the medical lock indicating the pressure on the inside of the lock.

(d) The air line supplying the medical lock shall be equipped with valves so arranged that the pressure may be controlled from inside or outside the lock.

(e) Oxygen inhalation apparatus shall at all times be maintained ready for use in the lock, but the source of supply shall be located outside of the lock. Oxygen and oxy-helium mixtures shall not be used until proper diagnosis is made by the appointed physician and shall be used only under his direction and supervision. The air compressing plant used for supplying compressed air to the medical lock shall have sufficient capacity to raise the pressure in the medical lock from zero pounds to 75 pounds per square inch gage within 5 minutes and shall be equipped to prevent excessively high temperature within the lock. The temperature within the lock shall not exceed 90 degrees F. at 75 pounds per square inch gage pressure.

(f) The medical lock shall be provided with suitable equipment including a couch not less than 6 feet in length, blankets, food lock, efficient means of verbal communication and of giving nonverbal signals between the inside and outside of the lock, and between the two compartments, and a window or windows through which workmen in either compartment can be observed from outside. Telephone communications shall be provided between the inside and outside of the medical lock. The telephone circuits shall, however, be so arranged that completion of calls originating inside the lock and destined for subscribers of the commercial communication system or calls the origin of which is from a subscriber of the commercial communication system and destined for the medical lock, must be completed by the lock attendant.

(g) All necessary apparatus, instruments, medical supplies and equipment as required by the appointed physician shall be kept in the lock at all times.

(3) **Use of medical lock.**

(a) The medical lock shall be kept ready for immediate use and, when any workman is actually employed in compressed air, shall be constantly in charge of a person trained in the use of a medical lock and suitably instructed as to the steps to be taken in the event of any workman suffering ill effects from compressed air.

(b) No workman shall enter or be treated in the medical lock in which pressure exists except at the direction of the appointed physician for the purpose of examination as to medical fitness or for the purpose of diagnosis of a suspected illness, or for treatment of the condition diagnosed by the appointed physician.

[Rules (Part XIX B), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-220 Medical supervision and medical and first-aid facilities--Decompression illness--Symptoms and treatment. Every compressed air worker, upon noticing any symptom of decompression illness and wherever he may be, on the job or off the job, shall proceed immediately to the first-aid room for examination and treatment. Treatment shall be rendered promptly as

directed by the appointed physician. Recompression, if prescribed by the appointed physician, shall be as the appointed physician may direct. After such treatment, the worker shall return to work only as and when directed by the physician.

[Rules (Part XIX C), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-225 Medical supervision and medical and first-aid facilities--Decompression illness to be reported. Every case of decompression illness shall be reported by the physician to the _____. Distribution of the report shall be as directed by the _____. Responsibility for supervision of treatment and accuracy of the report shall rest with the physician.

[Rules (Part XIX D), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-250 Routine examination of employees--Preemployment examinations and reports. (1) Every person considered for work in compressed air on any job and before starting work shall be given a thorough medical and physical examination by the appointed physician who shall order special tests when deemed necessary. The physician's findings shall be entered on a form entitled "preemployment history" and a form entitled "physical examination" furnished by the department of labor and industries. A copy of his recommendation as to employability shall be submitted to the superintendent and shall be kept on the job. The physical examination shall include adequate X-rays to determine possible preexisting lung or bone disease, a test of the ability of the ear to adjust to pressure changes, an orthopedic examination, a clear tone audiogram, an inspection for gross obesity, a simple test for pulmonary and cardiac function, and an inquiry concerning metallic objects in the body.

(2) No workman shall be employed in compressed air unless he has been examined by the appointed physician and is certified by the physician, by a health certificate or a workman's compressed air health register, to be fit for such employment, and further that the date of such certificate is not more than 3 days earlier.

(3) Where work in compressed air is urgently required to be done, before it is reasonably practical, because of the inaccessibility of the appointed physician, to arrange for any examination to obtain any certificate required, an examination may be made by any duly qualified physician who may issue a temporary certificate of fitness. A reexamination of such a workman by the appointed physician shall be made as soon as practicable.

[Rules (Part XX A), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-255 Routine examination of employees--Beginners. Every person who has not previously worked in compressed air shall be tested in the medical lock as part of the preemployment examination before commencing such work. If he passes the test he shall not work more than 4 hours on his first day of work or not more than one-half the regular total work period whichever is the lesser in time, after which he shall be reexamined by the physician for physical fitness. The physician's recommendation shall be in writing and signed by him. A copy shall be submitted to the employer and shall be kept on the job.

[Rules (Part XX B), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-260 Routine examination of employees--Periodic examination. Every compressed air worker shall be examined at regular intervals to determine his fitness to continue work in compressed air. The interval between regular examinations shall not exceed 2 months when work pressures are 13 pounds or less. For pressures exceeding 13 pounds, the regular periodic examination shall be made at intervals not exceeding one month.

[Rules (Part XX C), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-265 Routine examination of employees--Resumption of work. (1) Every compressed air worker who has been absent from the job 10 days or more shall be examined by the physician before resuming work. The physician's findings shall be submitted in writing to the person in charge and shall be kept on the job.

(2) Any workman who is suffering from a cold in the head, a sore throat, ear ache, or any other ailment which is likely to render him unfit for employment in compressed air shall report the matter to his employer or to the person placed in charge of the operation or to the appointed physician, and he shall not be employed in compressed air until he has since, so reporting, been examined by the appointed physician and certified by him to be fit for such employment.

(3) The appointed physician may, on examining or reexamining a person who has been or who is proposed to be employed in compressed air, vary, qualify, or revoke, by written entry in the workman's certificate, any statement relative to his fitness for employment in compressed air. By the same process, the physician may limit the pressure to which the workman is to be subjected or restrict the hours of employment or exposure in compressed air.

[Rules (Part XX D), filed 12/28/62; § 23, filed 3/23/60.]

WAC 296-36-270 Routine examination of employees--Physical fitness requirements. (1) Only persons who are able to readily equalize the pressure in their ears shall be accepted for work in compressed air.

(2) Persons having chronic alcoholism shall not be permitted to work in compressed air.

(3) Persons having chronic systemic disease or any impairing physical deformity or abnormality including excessive obesity shall not be engaged for work in compressed air.

(4) Persons having any disease of the ear or any systemic disease including skeletal, cardio-vascular, respiratory, genital urinary, or gastrointestinal, which may be aggravated by work in compressed air or which may

prevent safe performance of such work, shall not be permitted to work in compressed air.

(5) A person engaged for work in compressed air shall demonstrate his ability to read, speak and comprehend the English language.

[Rules (Part XX E), filed 12/28/62.]

WAC 296-36-990 Severability. If any provision of this safety standard or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this safety standard which can be given effect without the invalid provisions or applications and to this end the provision of this safety standard are declared to be severable.

[Rules (Part XXI), filed 12/28/62.]

Chapter 296-37 WAC
STANDARDS FOR COMMERCIAL DIVING OPERATIONS

WAC

296-37-510 Scope and application.
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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-37-010 Scope and application. [Section I, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-020 Purpose. [Section II, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-030 Definitions. [Section III, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-040 Appointment and duties of committees. [Section IV, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-050 Classification of apparatus permitted and air purity. [Section V, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-060 Approval of equipment. [Section VI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-070 Diver registration—Diver training or experience—Physical exam and medical history record. [Section VII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-071 Form # 1. [Form # 1, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-072 Form # 2. [Form # 2, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-080 General requirements, procedures and techniques. [Section VIII, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-081 Form # 3. [Form # 3, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-082 Illustrations of flags and shapes. [Illustrations, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-090 Recompression chamber—Tables—Attendant. [Section IX, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-100 Identification. [Section X, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-110 Waiver or variance. [Section XI, effective 2/1/64.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-300 Use of compressors in diving operations. [Rule 101, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-310 Equipment requirements—Divers air line, check valves, etc. [Rules 102 and 103, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-320 Equipment requirements—Barge operations. [Rule 104, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-330 Equipment requirements—Air tools used in underwater operations. [Rule 105, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-340 Equipment requirements—Inspection. [Rule 106, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-350 Safety rules—Generally. [Rule 107, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-360 Safety rules—Suggestions made by diver considered rule to govern. [Rule 108, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-370 Conditions on barge deck. [Rule 109, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-380 Use of two-way telephones. [Rule 110, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-390 Decompression chamber—When used. [Rule 111, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-395 Special stipulation regarding inexperienced divers and workmen. [Rule 112, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-400 Special stipulation regarding inexperienced divers and workmen—Diver may choose tender. [Rule 113, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-410 Judgment of diver to take precedent. [Rule 114, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-420 Requirement on all ship surveys. [Rule 115, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-430 Use of flood lights. [Rule 116, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-440 Rules for compressed air operations applicable to diving operations. [Rule 117, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-450 Availability of life preservers. [Rule 118, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17.040, 49.17-.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

296-37-460 Care and replacement of equipment. [Rules 119 and 120, filed 3/23/60.] Repealed by 78-10-094 (Order 78-18), filed 10/2/78. Statutory Authority: 49.17-.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW.

WAC 296-37-510 Scope and application. (1) The requirements included in this vertical chapter shall apply throughout the state wherever commercial diving takes place within the jurisdiction of the department of labor and industries. These requirements shall also be applicable to those diving related and supportive work activities not at the diving site but which have a direct effect on the safety of the diving operations. Examples may include but are not limited to: The supply of breathing air or gas; the supply of materials, equipment or supplies required by this chapter; the maintenance of diving equipment.

(2) This standard applies to diving and related support operations conducted in connection with all types of work and employments, including general industry, construction, ship repairing, shipbuilding, shipbreaking and longshoring. However, this standard does not apply to any diving operation:

(a) Performed solely for instructional purposes, using open-circuit, compressed-air SCUBA and conducted within the no-decompression limits; or

(b) Performed solely for search, rescue, or related public safety purposes by or under the control of a governmental agency; or

(c) Performed by noncommercial divers whose exposures may be of an entirely different type and whose operations are approved by the department of labor and industries;

(d) Governed by 45 CFR Part 46 (Protection of Human Subjects, United States Department of Health and Human Services) or equivalent rules or regulations established by another federal agency, which regulate research, development, or related purposes involving human subjects;

(e) Defined as scientific diving which is under the direction and control of a diving program containing the following elements:

(i) Diving safety manual which includes at a minimum: Procedures covering all diving operations specific to the program; procedures for emergency care, including recompression/decompression and evacuation; and criteria for diver training and certification;

(ii) Diving control (safety) board, with the majority of its members being active divers, which shall at a minimum have the authority to: Approve and monitor diving projects; review and revise the diving safety manual; assure compliance with the manual; certify the depths to which a diver has been trained; take disciplinary action for unsafe practices; and, assure adherence to the buddy system (a diver is accompanied by and is in continuous contact with another diver in the water) for SCUBA diving.

(3) This chapter shall augment the requirements of the general safety and health standard, chapter 296-24 WAC and the general occupational health standard, chapter 296-62 WAC. In instances where this chapter is in direct conflict with the requirements of any general horizontal standard, the requirements of this chapter shall apply.

(4) Hoisting gear used in diving operations shall be inspected and certified as required by chapter 296-56 WAC, safety standards for longshore, stevedore and related waterfront operations.

(5) Application in emergencies. An employer may deviate from the requirements of this standard to the extent necessary to prevent or minimize a situation which is likely to cause death, serious physical harm, or major environmental damage, provided that the employer:

(a) Notifies the assistant director of the department of labor and industries in Olympia or the chief safety inspector for the region within 48 hours of the onset of the emergency situation indicating the nature of the emergency and extent of the deviation from the prescribed regulations; and

(b) Upon request from the authority notified, submits such information in writing.

(6) Employer obligation. The employer shall be responsible for compliance with:

(a) All provisions of this standard of general applicability; and

(b) All requirements pertaining to specific diving modes to the extent diving operations in such modes are conducted.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-510, filed 12/26/86; 81-07-048 (Order 81-4), § 296-37-510, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-510, filed 10/2/78.]

WAC 296-37-512 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the director of the department of labor and industries or his authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the department of labor and industries and upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the director of the department of labor and industries at Olympia, Washington, or his duly authorized representative, the assistant director, division of industrial safety and health, department of labor and industries, Olympia, Washington. Variance application forms may be obtained from the department upon request.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-512, filed 10/2/78.]

WAC 296-37-515 Definitions. As used in this standard, the listed terms are defined as follows:

(1) "Acfm": Actual cubic feet per minute.

(2) "ASME Code or equivalent": ASME (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code, Section VIII, or an equivalent code which the employer can demonstrate to be equally effective.

(3) "ATA": Atmosphere absolute.

(4) "Bell": An enclosed compartment, pressurized (closed bell) or unpressurized (open bell), which allows the diver to be transported to and from the underwater work area and which may be used as a temporary refuge during diving operations.

(5) "Bottom time": The total elapsed time measured in minutes from the time when the diver leaves the surface in descent to the time that the diver begins ascent.

(6) "Bursting pressure": The pressure at which a pressure containment device would fail structurally.

(7) "Cylinder": A pressure vessel for the storage of gases.

(8) "Recompression/decompression chamber": A pressure vessel for human occupancy such as a surface decompression chamber, closed bell, or deep diving system used to decompress divers and to treat decompression sickness.

(9) "Decompression sickness": A condition with a variety of symptoms which may result from gas or bubbles in the tissues of divers after pressure reduction.

(10) "Recompression/decompression table": A profile or set of profiles of depth–time relationships for ascent rates and breathing mixtures to be followed after a specific depth–time exposure or exposures.

(11) "Dive location": A surface or vessel from which a diving operation is conducted.

(12) "Dive–location reserve breathing gas": A supply system of air or mixed–gas (as appropriate) at the dive location which is independent of the primary supply system and sufficient to support divers during the planned decompression.

(13) "Dive team": Divers and support employees involved in a diving operation, including the designated person–in–charge.

(14) "Diver": An employee working in water using underwater apparatus which supplies compressed breathing gas at the ambient pressure.

(15) "Diver–carried reserve breathing gas": A diver–carried supply of air or mixed gas (as appropriate) sufficient under standard operating conditions to allow the diver to reach the surface, or another source of breathing gas, or to be reached by a standby diver.

(16) "Diving mode": A type of diving requiring specific equipment, procedures and techniques (SCUBA, surface–supplied air, or mixed gas).

(17) "Fsw": Feet of seawater (or equivalent static pressure head).

(18) "Heavy gear": Diver–worn deep–sea dress including helmet, breastplate, dry suit, shoes, and appropriate weights.

(19) "Hyperbaric conditions": Pressure conditions in excess of surface pressure.

(20) "Inwater stage": A suspended underwater platform which supports a diver in the water.

(21) "Liveboating": The practice of supporting a surfaced–supplied air or mixed gas diver from a vessel which is underway.

(22) "Mixed–gas diving": A diving mode in which the diver is supplied in the water with a breathing gas other than air.

(23) "No–decompression limits": The depth–time limits of the "no–decompression limits and repetitive dive group designation table for no–decompression air dives," U.S. Navy Diving Manual or equivalent limits which the employer can demonstrate to be equally effective.

(24) "Psi(g)": Pounds per square inch (gauge).

(25) "Scientific diving" means diving performed solely as a necessary part of a scientific, research, or educational activity by employees whose sole purpose for diving is to perform scientific research tasks. Scientific diving does not include performing any tasks usually associated with commercial diving such as: Placing or removing heavy objects underwater; inspection of pipelines

and similar objects; construction; demolition; cutting or welding; or the use of explosives.

(26) "SCUBA diving": A diving mode independent of surface supply in which the diver uses open circuit self–contained underwater breathing apparatus.

(27) "Standby diver": A diver at the dive location properly equipped and available to assist a diver in the water.

(28) "Surface–supplied air diving": A diving mode in which the diver in the water is supplied from the dive location with compressed air for breathing.

(29) "Treatment table": A depth–time and breathing gas profile designed to treat decompression sickness.

(30) "Umbilical": The composite hose bundle between a dive location and a diver or bell, or between a diver and a bell, which supplies the diver or bell with breathing gas, communications, power, or heat as appropriate to the diving mode or conditions, and includes a safety line between the diver and the dive location.

(31) "Volume tank": A pressure vessel connected to the outlet of a compressor and used as an air reservoir.

(32) "Working pressure": The maximum pressure to which a pressure containment device may be exposed under standard operating conditions.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87–02–002 (Order 86–44), § 296–37–515, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78–10–094 (Order 78–18), § 296–37–515, filed 10/2/78.]

WAC 296-37-520 Qualifications of dive team. (1) General.

(a) Each dive team member shall have the experience or training necessary to perform assigned tasks in a safe and healthful manner.

(b) Each dive team member shall have experience or training in the following:

(i) The use of tools, equipment and systems relevant to assigned tasks;

(ii) Techniques of the assigned diving mode; and

(iii) Diving operations and emergency procedures.

(c) All dive team members shall be trained in cardiopulmonary resuscitation and first aid (American Red Cross standard course or equivalent).

(d) Dive team members who are exposed to or control the exposure of others to hyperbaric conditions shall be trained in diving–related physics and physiology.

(2) Assignments.

(a) Each dive team member shall be assigned tasks in accordance with the employee's experience or training, except that limited additional tasks may be assigned to an employee undergoing training provided that these tasks are performed under the direct supervision of an experienced dive team member.

(b) The employer shall not require a dive team member to be exposed to hyperbaric conditions against the employee's will, except when necessary to complete decompression or treatment procedures.

(c) The employer shall not permit a dive team member to dive or be otherwise exposed to hyperbaric conditions for the duration of any temporary physical impairment or condition which is known to the employer and is likely to affect adversely the safety or health of a dive team member.

(3) Designated person–in–charge.

(a) The employer or an employee designated by the employer shall be at the dive location in charge of all aspects of the diving operation affecting the safety and health of dive team members.

(b) The designated person–in–charge shall have experience and training in the conduct of the assigned diving operation.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78–10–094 (Order 78–18), § 296–37–520, filed 10/2/78.]

WAC 296-37-525 Medical requirements. (1) General.

(a) The employer shall determine that dive team members who are, or are likely to be, exposed to hyperbaric conditions are medically fit to perform assigned tasks in a safe and healthful manner.

(b) The employer shall provide each dive team member who is, or is likely to be, exposed to hyperbaric conditions with all medical examinations required by this standard.

(c) All medical examinations required by this standard shall be performed by, or under the direction of, a physician at no cost to the employee.

(2) Frequency of medical examinations. Medical examinations shall be provided:

(a) Prior to initial hyperbaric exposure with the employer, unless an equivalent medical examination has been given within the preceding 12 months and the employer has obtained the results of the examination and an opinion from the examining physician of the employee's medical fitness to dive or to be otherwise exposed to hyperbaric conditions;

(b) At one year intervals from the date of initial examination or last equivalent examination; and

(c) After an injury or illness requiring hospitalization of more than twenty–four hours.

(3) Information provided to examining physician. The employer shall provide the following information to the examining physician:

(a) A copy of the medical requirements of this standard; and

(b) A summary of the nature and extent of hyperbaric conditions to which the dive team member will be exposed, including diving modes and types of work to be assigned.

(4) Content of medical examinations.

(a) Medical examinations conducted initially and annually shall consist of the following:

(i) Medical history;

(ii) Diving–related work history;

(iii) Basic physical examination;

(iv) The tests required by Table I; and

(v) Any additional tests the physician considers necessary.

(b) Medical examinations conducted after an injury or illness requiring hospitalization of more than 24 hours

shall be appropriate to the nature and extent of the injury or illness as determined by the examining physician.

TABLE I

TESTS FOR DIVING MEDICAL EXAMINATION

Test	Initial Examination	Annual Reexamination
Chest x-ray	x	
Visual acuity	x	x
Color blindness	x	
EKG: Standard 12L[1]		
Hearing test	x	x
Hematocrit or hemoglobin.	x	x
Sickle cell index	x	
White blood count	x	x
Urinalysis	x	x

[1]To be given to the employee once, at age 35 or over.

(5) Physician's written report.

(a) After any medical examination required by this standard, the employer shall obtain a written report prepared by the examining physician containing:

(i) The results of the medical examination; and

(ii) The examining physician's opinion of the employee's fitness to be exposed to hyperbaric conditions, including any recommended restrictions or limitations to such exposure (see WAC 296-37-585).

(b) The employer shall provide the employee with a copy of the physician's written report.

(6) Determination of employee fitness.

(a) The employer shall determine the extent and nature of the dive team member's fitness to engage in diving or be otherwise exposed to hyperbaric conditions consistent with the recommendations in the examining physician's report.

(b) If the examining physician has recommended a restriction or limitation on the dive team member's exposure to hyperbaric conditions, and the affected employee does not concur, a second physician selected by the employee shall render a medical opinion on the nature and extent of the restriction or limitation, if any.

(c) If the recommendation of the second opinion differs from that of the examining (first) physician, and if the employer and employee are unable to agree on the nature and extent of the restriction or limitation, an opinion from a third physician selected by the first two physicians shall be obtained. The employer's determination of the dive team member's fitness shall be consistent with the medical opinion of the third physician, unless the employer and employee reach an agreement which is otherwise consistent with the recommendation or opinion of at least two of the physicians involved.

(d) Nothing in this procedure shall be construed to prohibit either a dive team member from accepting, or an employer from offering, an assignment which is otherwise consistent with at least one medical opinion while a final determination on the employee's fitness is pending.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-525, filed 10/2/78.]

WAC 296-37-530 Safe practices manual. (1) General. The employer shall develop and maintain a safe practices manual which shall be made available at the dive location to each dive team member.

(2) Contents.

(a) The safe practices manual shall contain a copy of this standard and the employer's policies for implementing the requirements of this standard.

(b) For each diving mode engaged in, the safe practices manual shall include:

(i) Safety procedures and checklists for diving operations;

(ii) Assignments and responsibilities of the dive team members;

(iii) Equipment procedures and checklists; and

(iv) Emergency procedures for fire, equipment failure, adverse environmental conditions, and medical illness and injury.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-530, filed 10/2/78.]

WAC 296-37-535 Predive procedures. (1) General. The employer shall comply with the following requirements prior to each diving operation, unless otherwise specified.

(2) Emergency aid. A list shall be kept at the dive location of the telephone or call numbers of the following:

(a) An operational decompression chamber (if not at the dive location);

(b) Accessible hospitals;

(c) Available physicians;

(d) Available means of transportation; and

(e) The nearest U.S. Coast Guard Rescue Coordination Center.

(3) First-aid supplies.

(a) A first-aid kit appropriate for the diving operation and approved by a physician shall be available at the dive location.

(b) When used in a decompression chamber or bell, the first-aid kit shall be suitable for use under hyperbaric conditions.

(c) In addition to any other first-aid supplies, an American Red Cross standard first-aid handbook or equivalent, and a bag-type manual resuscitator with transparent mask and tubing shall be available at the dive location.

(4) Planning and assessment. Planning of a diving operation shall include an assessment of the safety and health aspects of the following:

(a) Diving mode;

(b) Surface and underwater conditions and hazards;

(c) Breathing gas supply (including reserves);

(d) Thermal protection;

(e) Diving equipment and systems;

(f) Dive team assignments and physical fitness of dive team members (including any impairment known to the employer);

(g) Repetitive dive designation or residual inert gas status of dive team members;

(h) Decompression and treatment procedures (including altitude corrections); and

(i) Emergency procedures.

(5) Hazardous activities. To minimize hazards to the dive team, diving operations shall be coordinated with other activities in the vicinity which are likely to interfere with the diving operation.

(6) Employee briefing.

(a) Dive team members shall be briefed on:

(i) The tasks to be undertaken;

(ii) Safety procedures for the diving mode;

(iii) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation; and

(iv) Any modifications to operating procedures necessitated by the specific diving operation.

(b) Prior to making individual dive team member assignments, the employer shall inquire into the dive team member's current state of physical fitness, and indicate to the dive team member the procedure for reporting physical problems or adverse physiological effects during and after the dive.

(7) Equipment inspection. The breathing gas supply system including reserve breathing gas supplies, masks, helmets, thermal protection, and bell handling mechanism (when appropriate) shall be inspected prior to each dive.

(8) Warning signal. When diving from surfaces other than vessels in areas capable of supporting marine traffic, a rigid replica of the international code flag "A" at least one meter in height shall be displayed at the dive location in a manner which allows all–round visibility, and shall be illuminated during night diving operations.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78–10–094 (Order 78–18), § 296–37–535, filed 10/2/78.]

WAC 296–37–540 Procedures during dive. (1) General. The employer shall comply with the following requirements which are applicable to each diving operation unless otherwise specified.

(2) Water entry and exit.

(a) A means capable of supporting the diver shall be provided for entering and exiting the water.

(b) The means provided for exiting the water shall extend below the water surface.

(c) A means shall be provided to assist an injured diver from the water or into a bell.

(3) Communications.

(a) An operational two–way voice communication system shall be used between:

(i) Each surface–supplied air or mixed–gas diver and a dive team member at the dive location or bell (when provided or required); and

(ii) The bell and the dive location.

(b) An operational, two–way communication system shall be available at the dive location to obtain emergency assistance.

(4) Decompression tables. Decompression, repetitive, and no–decompression tables (as appropriate) shall be at the dive location.

(5) Dive profiles. A depth–time profile, including when appropriate any breathing gas changes, shall be maintained for each diver during the dive including decompression.

(6) Hand–held power tools and equipment.

(a) Hand–held electrical tools and equipment shall be deenergized before being placed into or retrieved from the water.

(b) Hand–held power tools shall not be supplied with power from the dive location until requested by the diver.

(7) Welding and burning.

(a) A current supply switch to interrupt the current flow to the welding or burning electrode shall be:

(i) Tended by a dive team member in voice communication with the diver performing the welding or burning; and

(ii) Kept in the open position except when the diver is welding or burning.

(b) The welding machine frame shall be grounded.

(c) Welding and burning cables, electrode holders, and connections shall be capable of carrying the maximum current required by the work, and shall be properly insulated.

(d) Insulated gloves shall be provided to divers performing welding and burning operations.

(e) Prior to welding or burning on closed compartments, structures or pipes, which contain a flammable vapor or in which a flammable vapor may be generated by the work, they shall be vented, flooded, or purged with a mixture of gases which will not support combustion.

(8) Explosives.

(a) Employers shall transport, store, and use explosives in accordance with this section and applicable provisions of chapter 296–52 WAC.

(b) Electrical continuity of explosive circuits shall not be tested until the diver is out of the water.

(c) Explosives shall not be detonated while the diver is in the water.

(9) Termination of dive. The working interval of a dive shall be terminated when:

(a) A diver requests termination;

(b) A diver fails to respond correctly to communications or signals from a dive team member;

(c) Communications are lost and can not be quickly reestablished between the diver and a dive team member at the dive location, and between the designated person–in–charge and the person controlling the vessel in liveboating operations; or

(d) A diver begins to use diver–carried reserve breathing gas or the dive–location reserve breathing gas.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78–10–094 (Order 78–18), § 296–37–540, filed 10/2/78.]

WAC 296-37-545 Postdive procedures. (1) General. The employer shall comply with the following requirements which are applicable after each diving operation, unless otherwise specified.

(2) Precautions.

(a) After the completion of any dive, the employer shall:

(i) Check the physical condition of the diver;

(ii) Instruct the diver to report any physical problems or adverse physiological effects including symptoms of decompression sickness;

(iii) Advise the diver of the location of a decompression chamber which is ready for use; and

(iv) Alert the diver to the potential hazards of flying after diving.

(b) For any dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas as a breathing mixture, the employer shall instruct the diver to remain awake and in the vicinity of the decompression chamber which is at the dive location for at least one hour after the dive (including decompression or treatment as appropriate).

(3) Recompression capability.

(a) A decompression chamber capable of recompressing the diver at the surface to a minimum of 165 fsw (6 ATA) shall be available at the dive location for:

(i) Surface-supplied air diving to depths deeper than 100 fsw and shallower than 220 fsw;

(ii) Mixed gas diving shallower than 300 fsw; or

(iii) Diving outside the no-decompression limits shallower than 300 fsw.

(b) A decompression chamber capable of recompressing the diver at the surface to the maximum depth of the dive shall be available at the dive location for dives deeper than 300 fsw.

(c) The decompression chamber shall be:

(i) Dual-lock;

(ii) Multiplace; and

(iii) Located within five minutes of the dive location.

(d) The decompression chamber shall be equipped with:

(i) A pressure gauge for each pressurized compartment designed for human occupancy;

(ii) A built-in-breathing-system with a minimum of one mask per occupant;

(iii) A two-way voice communication system between occupants and a dive team member at the dive location;

(iv) A viewport; and

(v) Illumination capability to light the interior.

(e) Treatment tables, treatment gas appropriate to the diving mode, and sufficient gas to conduct treatment shall be available at the dive location.

(f) A dive team member shall be available at the dive location during and for at least one hour after the dive to operate the decompression chamber (when required or provided).

(4) Record of dive.

(a) The following information shall be recorded and maintained for each diving operation:

(i) Names of dive team members including designated person-in-charge;

(ii) Date, time, and location;

(iii) Diving modes used;

(iv) General nature of work performed;

(v) Approximate underwater and surface conditions (visibility, water temperature and current); and

(vi) Maximum depth and bottom time for each diver.

(b) For each dive outside the no-decompression limits, deeper than 100 fsw or using mixed gas, the following additional information shall be recorded and maintained:

(i) Depth-time and breathing gas profiles;

(ii) Decompression table designation (including modification); and

(iii) Elapsed time since last pressure exposure if less than 24 hours or repetitive dive designation for each diver.

(c) For each dive in which decompression sickness is suspected or symptoms are evident, the following additional information shall be recorded and maintained:

(i) Description of decompression sickness symptoms (including depth and time of onset); and

(ii) Description and results of treatment.

(5) Decompression procedure assessment. The employer shall:

(a) Investigate and evaluate each incident of decompression sickness based on the recorded information, consideration of the past performance of decompression table used, and individual susceptibility;

(b) Take appropriate corrective action to reduce the probability of recurrence of decompression sickness; and

(c) Prepare a written evaluation of the decompression procedure assessment, including any corrective action taken, within 45 days of the incident of decompression sickness.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-545, filed 10/2/78.]

WAC 296-37-550 Scuba diving. (1) General. Employers engaged in scuba diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. SCUBA diving shall not be conducted:

(a) At depths deeper than 130 fsw;

(b) At depths deeper than 100 fsw or outside the no-decompression limits unless a decompression chamber is ready for use;

(c) Against currents exceeding one knot unless line-tended (this requirement does not preclude work swimming with, rather than against, the current); or

(d) In enclosed or physically confining spaces unless line-tended.

(3) Procedures. (a) A standby diver shall be available while a diver is in the water.

(b) A diver shall be line-tended from the surface, or accompanied by another diver in the water in continuous visual contact during the diving operation.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces and shall have positive means of communication with the diver or divers within the space.

(d) A diver–carried reserve breathing gas supply shall be provided for each diver consisting of:

(i) A manual reserve (J valve); or

(ii) An independent reserve cylinder with a separate regulator or connected to the underwater breathing apparatus.

(e) The valve of the reserve breathing gas supply shall be in the closed position prior to the dive.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 81-07-048 (Order 81-4), § 296-37-550, filed 3/17/81. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-550, filed 10/2/78.]

WAC 296-37-555 Surface-supplied air diving. (1) General. Employers engaged in surface–supplied air diving shall comply with the following requirements, unless otherwise specified.

(2) Limits.

(a) Surface–supplied air diving shall not be conducted at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw.

(b) A decompression chamber shall be ready for use at the dive location for any dive outside the no–decompression limits or deeper than 100 fsw.

(c) A bell shall be used for dives with an inwater decompression time greater than 120 minutes, except when heavy gear is worn or diving is conducted in physically confining spaces.

(3) Procedures.

(a) Each diver shall be continuously tended while in the water.

(b) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(c) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(d) For dives deeper than 100 fsw or outside the no–decompression limits:

(i) A separate dive team member shall tend each diver in the water;

(ii) A standby diver shall be available while a diver is in the water;

(iii) A diver–carried reserve breathing gas supply shall be provided for each diver except when heavy gear is worn; and

(iv) A dive–location reserve breathing gas supply shall be provided.

(e) For heavy–gear diving deeper than 100 fsw or outside the no–decompression limits:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver.

(ii) An inwater stage shall be provided to divers in the water.

(f) Except when heavy gear is worn or where physical space does not permit, a diver–carried reserve breathing gas supply shall be provided whenever the diver is prevented by the configuration of the dive area from ascending directly to the surface.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-555, filed 10/2/78.]

WAC 296-37-560 Mixed-gas diving. (1) General. Employers engaged in mixed–gas diving shall comply with the following requirements, unless otherwise specified.

(2) Limits. Mixed–gas diving shall be conducted only when:

(a) A decompression chamber is ready for use at the dive location; and

(i) A bell is used at depths greater than 220 fsw or when the dive involves inwater decompression time of greater than 120 minutes, except when heavy gear is worn or when diving in physically confining spaces; or

(ii) A closed bell is used at depths greater than 300 fsw, except when diving is conducted in physically confining spaces.

(3) Procedures.

(a) A separate dive team member shall tend each diver in the water.

(b) A standby diver shall be available while a diver is in the water.

(c) A diver shall be stationed at the underwater point of entry when diving is conducted in enclosed or physically confining spaces.

(d) Each diving operation shall have a primary breathing gas supply sufficient to support divers for the duration of the planned dive including decompression.

(e) Each diving operation shall have a dive–location reserve breathing gas supply.

(f) When heavy gear is worn:

(i) An extra breathing gas hose capable of supplying breathing gas to the diver in the water shall be available to the standby diver; and

(ii) An inwater stage shall be provided to divers in the water.

(g) An inwater stage shall be provided for divers without access to a bell for dives deeper than 100 fsw or outside the no–decompression limits.

(h) When a closed bell is used, one dive team member in the bell shall be available and tend the diver in the water.

(i) Except when heavy gear is worn or where physical space does not permit, a diver–carried reserve breathing gas supply shall be provided for each diver:

(i) Diving deeper than 100 fsw or outside the no–decompression limits; or

(ii) Prevented by the configuration of the dive area from directly ascending to the surface.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-560, filed 10/2/78.]

WAC 296-37-565 Liveboating. (1) General. Employers engaged in diving operations involving liveboating shall comply with the following requirements.

(2) Limits. Diving operations involving liveboating shall not be conducted:

(a) Liveboating. With an inwater decompression time of greater than 30 minutes;

(b) Using surface-supplied air at depths deeper than 190 fsw, except that dives with bottom times of 30 minutes or less may be conducted to depths of 220 fsw;

(c) Using mixed gas at depths greater than 220 fsw;

(d) In rough seas which significantly impede diver mobility or work function; or

(e) In other than daylight hours.

(3) Procedures.

(a) The propeller of the vessel shall be stopped before the diver enters or exits the water.

(b) A device shall be used which minimizes the possibility of entanglement of the diver's hose in the propeller of the vessel.

(c) Two-way voice communication between the designated person-in-charge and the person controlling the vessel shall be available while the diver is in the water.

(d) A standby diver shall be available while a diver is in the water.

(e) A diver-carried reserve breathing gas supply shall be carried by each diver engaged in liveboating operations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-565, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-565, filed 10/2/78.]

WAC 296-37-570 Equipment. (1) General.

(a) All employers shall comply with the following requirements, unless otherwise specified.

(b) Each equipment modification, repair, test, calibration or maintenance service shall be recorded by means of a tagging or logging system, and include the date and nature of work performed, and the name or initials of the person performing the work.

(2) Air compressor systems.

(a) Compressors used to supply air to the diver shall be equipped with a volume tank with a check valve on the inlet side, a pressure gauge, a relief valve, and a drain valve.

(b) A compressor shall be constructed and situated so as to avoid entry of contaminated air into the air-supply system and shall be equipped with a suitable in-line particulate filter followed by a bed of activated charcoal and, if necessary, a moisture absorber to further assure breathing air quality. These filters should be placed before any receiver and after the discharge in the compressor. If an oil-lubricated compressor is used, it shall be equipped with a carbon monoxide alarm or an equally as effective alternative if approved by the department.

(i) If a carbon monoxide alarm is used, it shall be calibrated to activate at or below 20 parts per million carbon monoxide at least once per month. A calibration and maintenance log shall be kept and shall be available for review and copying by the director or his or her designee. The log shall identify the test method, date, time of test, results, and the name of the person performing the test. The log shall be retained for at least one year from the date of the test.

(ii) If the use of an alarm at the compressor will not effectively provide warning to the diver or tender of a carbon monoxide problem, a remote alarm or other means of warning the wearer shall be used.

(iii) Breathing air couplings shall be incompatible with outlets for nonrespirable plant air or other gas systems to prevent inadvertent servicing of air-line breathing apparatus with nonrespirable gases.

(c) Respirable air supplied to a diver shall not contain:

(i) A level of carbon monoxide (CO) greater than 20 ppm;

(ii) A level of carbon dioxide (CO_2) greater than 1,000 ppm;

(iii) A level of oil mist greater than 5 milligrams per cubic meter; or

(iv) A noxious or pronounced odor.

(d) Compressor systems providing surface air to divers must have a low pressure warning device installed at the air purification system inlet to alert dive tenders of low air pressure.

The minimum alarm setting shall be 45 Psi plus an additional 15 Psi for each working atmosphere.

1 ATM = 33 fsw or 15 Psi
2 ATM = 66 fsw or 30 Psi
3 ATM = 99 fsw or 45 Psi
4 ATM = 132 fsw or 60 Psi
5 ATM = 165 fsw or 75 Psi
6 ATM = 198 fsw or 90 Psi

(e) The output of air compressor systems shall be tested for air purity every six months by means of samples taken at the connection to the distribution system, except that nonoil lubricated compressors need not be tested for oil mist.

(3) Breathing gas supply hoses.

(a) Breathing gas supply hoses shall:

(i) Have a working pressure at least equal to the working pressure of the total breathing gas system;

(ii) Have a rated bursting pressure at least equal to four times the working pressure;

(iii) Be tested at least annually to 1.5 times their working pressure; and

(iv) Have their open ends taped, capped or plugged when not in use.

(b) Breathing gas supply hose connectors shall:

(i) Be made of corrosion-resistant materials;

(ii) Have a working pressure at least equal to the working pressure of the hose to which they are attached; and

(iii) Be resistant to accidental disengagement.

(c) Umbilicals shall:

(i) Include a safety line which shall be attached in a manner to remove strain from the air supply hose;

(ii) Be marked in 10-foot increments to 100 feet beginning at the diver's end, and in 50 foot increments thereafter;

(iii) Be made of kink-resistant materials; and

(iv) Have a working pressure greater than the pressure equivalent to the maximum depth of the dive (relative to the supply source) plus 100 psi.

(4) Buoyancy control

(a) Helmets or masks connected directly to the dry suit or other buoyancy-changing equipment shall be equipped with an exhaust valve.

(b) A dry suit or other buoyancy-changing equipment not directly connected to the helmet or mask shall be equipped with an exhaust valve.

(c) When used for SCUBA diving, a buoyancy compensator shall have an inflation source separate from the breathing gas supply.

(d) An inflatable flotation device capable of maintaining the diver at the surface in a face-up position, having a manually activated inflation source independent of the breathing supply, an oral inflation device, and an exhaust valve shall be used for SCUBA diving.

(5) Compressed gas cylinders.

(a) Compressed gas cylinders shall:

(i) Be designed, constructed and maintained in accordance with the applicable provisions of WAC 296-24-920 through 296-24-94003.

(ii) Be stored in a ventilated area and protected from excessive heat;

(iii) Be secured from falling; and

(iv) Have shut-off valves recessed into the cylinder or protected by a cap, except when in use or manifolded, or when used for SCUBA diving.

(6) Recompression/decompression chambers.

(a) Each recompression/decompression chamber manufactured after the effective date of this standard, shall be built and maintained in accordance with the ASME Code or equivalent.

(b) Each recompression/decompression chamber manufactured prior to the effective date of this standard shall be maintained in conformity with the code requirements to which it was built, or equivalent.

(c) Each recompression/decompression chamber shall be equipped with:

(i) Means to maintain the atmosphere below a level of 25% oxygen by volume;

(ii) Mufflers on intake and exhaust lines, which shall be regularly inspected and maintained;

(iii) Suction guards on exhaust line openings; and

(iv) A means for extinguishing fire, and shall be maintained to minimize sources of ignition and combustible material.

(7) Gauges and timekeeping devices.

(a) Gauges indicating diver depth which can be read at the dive location shall be used for all dives except SCUBA.

(b) Each depth gauge shall be dead-weight tested or calibrated against a master reference gauge every six months, and when there is a discrepancy greater than two percent of full scale between any two equivalent gauges.

(c) A cylinder pressure gauge capable of being monitored by the diver during the dive shall be worn by each SCUBA diver.

(d) A timekeeping device shall be available at each dive location.

(8) Masks and helmets.

(a) Surface-supplied air and mixed-gas masks and helmets shall have:

(i) A nonreturn valve at the attachment point between helmet or mask and hose which shall close readily and positively; and

(ii) An exhaust valve.

(b) Surface-supplied air masks and helmets shall have a minimum ventilation rate capability of 4.5 acfm at any depth at which they are operated or the capability of maintaining the diver's inspired carbon dioxide partial pressure below 0.02 ATA when the diver is producing carbon dioxide at the rate of 1.6 standard liters per minute.

(9) Oxygen safety.

(a) Equipment used with oxygen or mixtures containing over forty percent by volume oxygen shall be designed for oxygen service.

(b) Components (except umbilicals) exposed to oxygen or mixtures containing over forty percent by volume oxygen shall be cleaned of flammable materials before use.

(c) Oxygen systems over 125 psig and compressed air systems over 500 psig shall have slow-opening shut-off valves.

(10) Weights and harnesses.

(a) Except when heavy gear is worn, divers shall be equipped with a weight belt or assembly capable of quick release.

(b) Except when heavy gear is worn or in SCUBA diving, each diver shall wear a safety harness with:

(i) A positive buckling device;

(ii) An attachment point for the umbilical to prevent strain on the mask or helmet; and

(iii) A lifting point to distribute the pull force of the line over the diver's body.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-570, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-570, filed 10/2/78.]

WAC 296-37-575 Recordkeeping requirements. (1) Recording and reporting.

(a) The employer shall record and report occupational injuries and illnesses in accordance with requirements of chapters 296-27 and 296-350 WAC.

(b) The employer shall record the occurrence of any diving-related injury or illness which requires any dive team member to be hospitalized for 24 hours or more, specifying the circumstances of the incident and the extent of any injuries or illnesses.

(2) Availability of records.

(a) Upon the request of the director of the department of labor and industries or his duly authorized designees, the employer shall make available for inspection and copying any record or document required by this standard.

Note: Requests for information or copies of records and reports by OSHA or NIOSH shall be made to the director of the department of labor and industries.

(b) Records and documents required by this standard shall be provided upon request to employees, designated representatives, and the assistant director in accordance with WAC 296-62-05201 through 296-62-05209 and

296-62-05213 through 296-62-05217. Safe practices manuals, depth-time profiles, recording of dives, recompression/decompression procedure assessment evaluations, and records of hospitalizations shall be provided in the same manner as employee exposure records or analyses using exposure or medical records. Equipment inspections and testing records which pertain to employees shall also be provided upon request to employees and their designated representatives.

(c) Records and documents required by this standard shall be retained by the employer for the following period:

(i) Dive team member medical records (physician's reports) (WAC 296-37-525) - five years;

(ii) Safe practices manual (WAC 296-37-530) - current document only;

(iii) Depth-time profile (WAC 296-37-540) - until completion of the recording of dive, or until completion of recompression/decompression procedure assessment where there has been an incident of decompression sickness;

(iv) Recording dive (WAC 296-37-545) one year, except five years where there has been an incident of decompression sickness;

(v) Recompression/decompression procedure assessment evaluations (WAC 296-37-545) - five years;

(vi) Equipment inspections and testing records (WAC 296-37-570) - current entry or tag, or until equipment is withdrawn from service;

(vii) Records of hospitalizations (WAC 296-37-575) - five years.

(d) After the expiration of the retention period of any record required to be kept for five years, the employer shall forward such records to the National Institute for Occupational Safety and Health, Department of Health and Human Services. The employer shall also comply with any additional requirements set forth in WAC 296-62-05215.

Note: Forward the records to the following address:
National Institute for Occupational
Safety and Health
Department of Health and Human Services
Surveillance Branch
Mail Stop R-18 Ridge
PHS CDC NIOSH
4676 Columbia Park Way
Cincinnati, Ohio 45226

(e) In the event the employer ceases to do business:

(i) The successor employer shall receive and retain all dive and employee medical records required by this standard; or

(ii) If there is no successor employer, dive and employee medical records shall be forwarded to the National Institute for Occupational Safety and Health, Department of Health and Human Services.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 87-02-002 (Order 86-44), § 296-37-575, filed 12/26/86. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-18-029 (Order 81-21), § 296-37-575, filed 8/27/81. Statutory Authority: RCW 49.17.040, 49-.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-575, filed 10/2/78.]

WAC 296-37-580 Effective date. This standard shall be effective 30 days after being filed with the code reviser.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-580, filed 10/2/78.]

WAC 296-37-585 Examples of conditions which may restrict or limit exposure to hyperbaric conditions. (1) The following disorders may restrict or limit occupational exposure to hyperbaric conditions depending on severity, presence of residual effects, response to therapy, number of occurrences, diving mode, or degree and duration of isolation.

(a) History of seizure disorder other than early febrile convulsions.

(b) Malignancies (active) unless treated and without recurrence for five years.

(c) Chronic inability to equalize sinus and/or middle ear pressure.

(d) Cystic or cavitary disease of the lungs.

(e) Impaired organ function caused by alcohol or drug use.

(f) Conditions requiring continuous medication for control (e.g., antihistamines, steroids, barbiturates, mood altering drugs, or insulin).

(i) Meniere's disease.

(ii) Hemoglobinopathies.

(iii) Obstructive or restrictive lung disease.

(iv) Vestibular end organ destruction.

(v) Pneumothorax.

(vi) Cardiac abnormalities (e.g., pathological heart block, valvular disease, intraventricular conduction defects other than isolated right bundle branch block, angina pectoris, arrhythmia, coronary artery disease).

(vii) Juxta-articular osteonecrosis.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, and chapters 42.30 and 43.22 RCW. 78-10-094 (Order 78-18), § 296-37-585, filed 10/2/78.]

Chapter 296-43 WAC
HEATING INSTALLATIONS--CABLE, RADIANT, SOIL, ETC.

WAC

296-43-010 Heating cables—General.
296-43-020 Heating cables—Maximum wattage and temperature.
296-43-030 Heating cables—Permissible installation methods in buildings.
296-43-040 Heating cables—Thermal insulation.
296-43-050 Heating cables—Elements installed in tanks, troughs, or pipe lines containing liquids.
296-43-060 Heating element in soil or sand.
296-43-070 Heating element imbedded in driveways.

WAC 296-43-010 Heating cables--General. Heating cables or wires designed for use in low temperature heating applications, i.e., soil, water, plaster, walls and ceilings, floors, etc., shall conform to the provisions of the N.E.C. Article 422 as applicable and to the following specifications:

(1) The units shall be manufactured in such continuous lengths that the maximum temperature of the element does not exceed 100 degrees C. or the maximum safe working temperature of the insulating material covering the element. Whichever is the lower temperature shall be considered the maximum permissible working temperature of the element.

(2) The insulation on the element shall equal that specified for equivalent 600 v. combined Type TW and TH or RW and RH conductor insulation and, in addition, shall meet the following requirements:

(a) Permissible maximum water absorption shall not exceed .015 grams per sq. in. of surface in distilled water at 70 degree C. in 7 days.

(b) Maximum safe operating temperature of the insulation shall not be less than 70 degrees C.

(c) It shall be suitable for the purpose intended and approved by the Washington state electrical inspection department as such.

(d) Samples for testing: The manufacturer shall submit suitable samples to the Washington state inspection department for inspection and testing as required.

(e) Marking: Each unit shall be provided with permanent labels or markings at the factory.

(i) These labels shall be placed not more than 3 in. from the terminal on each end and shall include the makers' name and the normal rating in volts and amperes; or, volts and watts.

(ii) 120 volt labels shall be bright metal or white in color. 240 v. labels shall be colored red.

(f) Units shall be installed in their complete lengths as supplied by the factory. Units from which a label or labels are missing will be considered shortened and will not be approved until such time as the installing contractor shall provide proof, by connecting suitable test meters into the circuits with which the inspector, at his convenience, may satisfy himself that the element is suitable for the purpose intended.

(g) Heating element units shall not be covered until clearance has been received from the local inspecting authority.

(h) Lead covered heating elements shall not be permitted in direct contact with plaster, concrete or similar materials capable of causing crystallization and/or checking of the lead sheath, unless protected by a suitable covering of chemically inert material.

(i) All control equipment must be of approved type and of suitable rating for the use intended.

[Rules (part), filed 4/3/61.]

WAC 296-43-020 Heating cables--Maximum wattage and temperature. (1) In contact with combustible material. Maximum wattage of the element shall not exceed 3 watts per lineal foot or maximum temperature of 60 degrees C. (140 degrees F.) when in direct contact with combustible material or applied over existing ceilings.

(2) Imbedded in cement. Maximum wattage of the element shall not exceed 4 watts per lineal foot or maximum temperature of 80 degrees C. (194 degrees F.) when imbedded in cement, plaster or similar noncombustible, heat-diffusing material.

[Rules (part), filed 4/3/61.]

WAC 296-43-030 Heating cables--Permissible installation methods in buildings. Wiring to the elements shall conform to the National Electrical Code and to the following conditions:

(1) **Terminals.**

(a) Termination of radiant heating elements shall be with solderless lugs, binding posts, or similar compression terminals.

(b) Terminal boxes for radiant heating elements, where they are terminated in junction boxes and also for the circuit wires with which they are connected, shall be protected by asbestos, glass, or similar noncombustible sleeving to a point at least 18 in. from the terminal.

(c) Not more than 3 in. of element per lead shall be permitted inside the terminal box and not more than two heating element leads shall be terminated in any 1-gang terminal box.

(d) The use of metal raceways for terminating radiant heating cables is permissible providing 6 in. clearance is maintained between points where elements enter the raceways, and, that the elements are terminated as provided in subsections (1)(b) and (1)(c) above.

(e) Where nonheating leads, at least 2 ft. in length, from the element are provided by the factory requirements of subsections (1)(b), (1)(c) and (1)(d) above may be waived, providing that the number of wires per box shall comply with section 3705 of the N.E.C.

(2) **Imbedded in plaster.** Heating elements, when imbedded in plaster, shall conform to the following provisions:

(a) Adjacent turns shall be not less than 1 in. apart and secured suitably by insulated staples, adhesive tape, patching plaster, plaster of paris, or other suitable means of attachment, as approved by the local inspecting authority, on not less than 2 ft. centers.

(b) Nonmetallic insulating tape shall be used where the element crosses metal reinforcing on rock plaster board and similar lath substitutes, when the heating element is applied directly to the lath base. (Where possible, nonmetallic reinforcing should be substituted to avoid the hum that is occasionally generated in the reinforcing while the current is on.)

(c) When heating element is used on a surface employing metal lath base, a brown coat shall be applied sufficient to completely cover the metal lath before the element is applied; and, adhesive tape, patching plaster, plaster of paris, or other suitable means of attachment be used to secure the element in place.

(d) Heating element shall only be applied to fire resistant plaster bases.

(3) **Imbedded in concrete floors.** Heating elements imbedded in concrete floors shall conform to the following provisions:

(a) Adjacent turns shall not be less than 1 in. apart and shall be held securely in place by suitable frames or spreaders while the concrete topping is applied.

(b) Heating cables shall maintain at least 1 in. clearance between the element and adjacent metallic pipe or similar conductors imbedded in the slab.

(c) Suitable rigid conduit risers shall be provided for terminating elements imbedded in concrete floors unless raceways or other adequate means are provided for protecting the elements where they leave the slab.

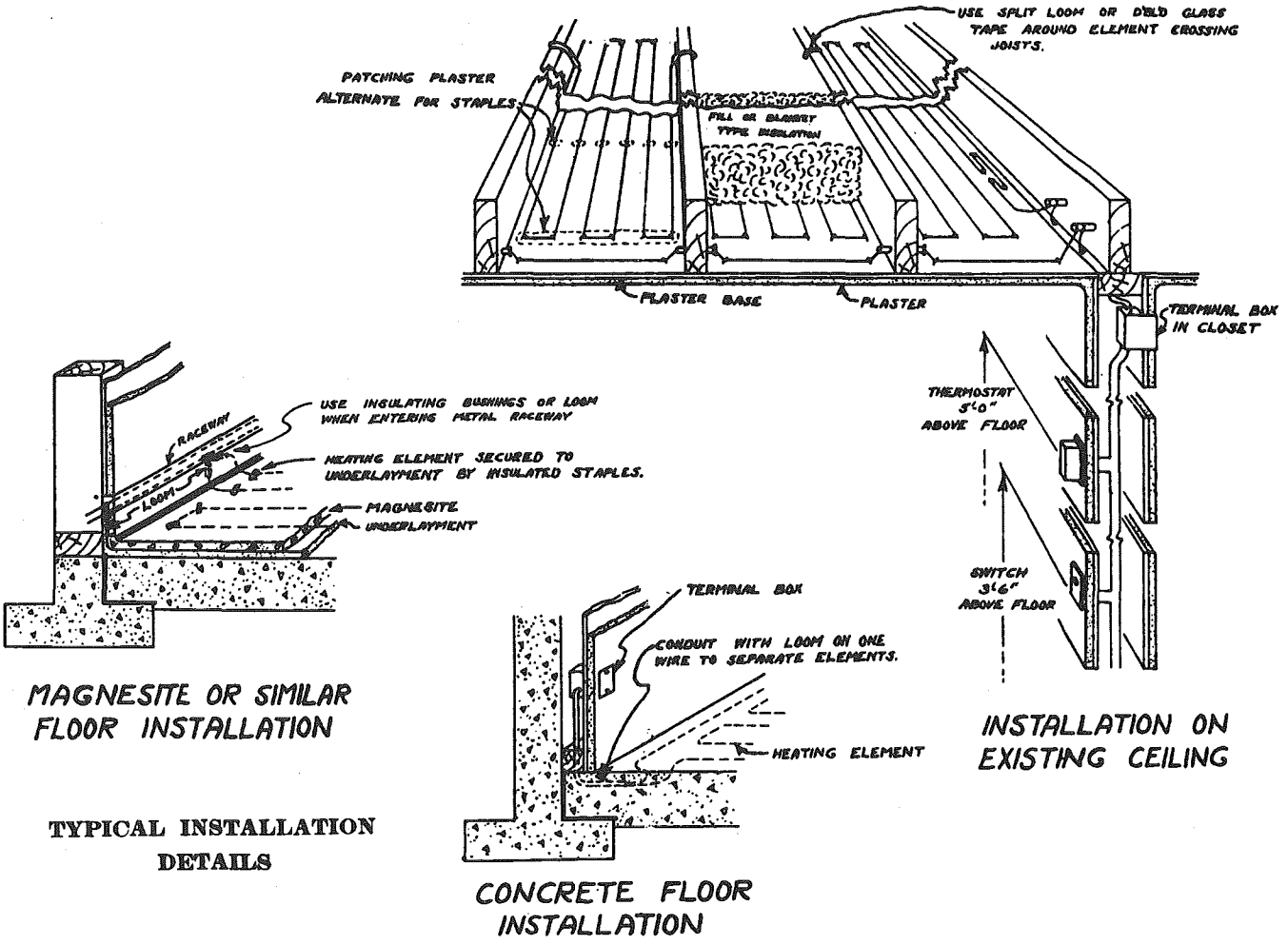
(d) Insulating sleeves shall be placed over the element from the point where it enters the slab through the conduit to the terminating box, unless nonheating leads, not less than 2 ft. long, are provided with the element by the factory.

(e) Suitable insulating bushings shall be used to separate the leads or elements where they enter the conduit in the slab.

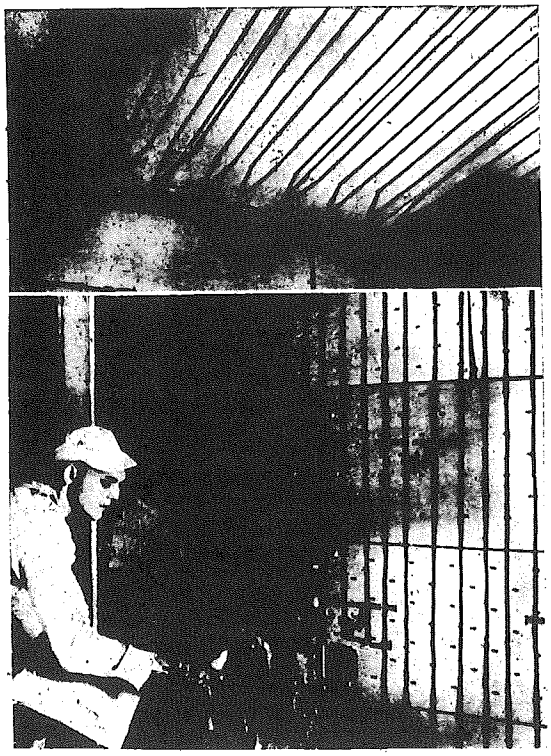
(4) **Magnesite, terrazzo, tile and similar floors and walls.**

(a) Shall conform to the provisions of sections 1, 2, and 3 as applicable.

(b) Heating cables may be attached to the surface of the underlayment where magnesite or terrazzo floors are installed.



TYPICAL INSTALLATION DETAILS



Upper: Heating cable applied to plaster board ceiling ready for plaster. Note clearance between metal lath and heating cable.

Lower: Heating cable applied to plaster board wall. Note that elements run vertically to allow plasterer to apply the brown coat parallel to the cable.

(5) Linoleum, asphalt tile and similar floor coverings may be placed over heating elements on wood floors providing the element is first covered with 3/8 in. of magnesium oxychloride or equal fire resistant underlayment.

(6) Existing ceilings.

(a) Heating elements placed over existing ceilings shall be suitably secured thereto conforming to the provisions of WAC 296-43-020(1), and 296-43-030 (1), (2), and (3) as applicable.

(b) Wood lath shall be covered with asbestos paper, gypsum board or similar fire resistant material before the element is applied to the ceiling.

(c) Heating elements shall not be applied over insulating board type of lath such as celotex, insulite, firtex, and similar materials. Where this type of material is used, the element should be secured to the under face of the ceiling and covered with plaster or fire resistant board of a noninsulating type.

(d) Elements crossing ceiling joints shall be enclosed in split loom or folded glass tape to protect the element.

(7) Gypsum board, plaster lath and similar heat conducting fire resistant materials may have the heating element applied directly thereto.

(8) Ceilings of combustible material; i.e., wood veneer, tempered hardboard and similar heat conducting materials shall first be covered by asbestos paper, gypsum board, or similar fire resistant material.

(9) Pads containing heating elements for placing heating elements in spaces over existing ceilings or in walls or floors which are otherwise inaccessible, shall conform to the provisions of WAC 296-43-010 (1), (2), 296-43-020(1), 296-43-030 (6), (7), (8), and 296-43-040 as applicable, and the following specifications:

(a) The pads shall be of fire resistant, nonconducting material.

(b) The pads shall rigidly secure the element in such a manner that it will be impossible for the adjacent turns of the element to touch.

(i) The leads shall be suitably secured to the pad in a manner which provides permanent adequate separation between the leads.

(ii) The leads shall be covered with an insulating sleeve from the pad to the termination of the heating part of the element.

(iii) All connections must be accessible.

[Rules (part), filed 4/3/61.]

WAC 296-43-040 Heating cables--Thermal insulation. Thermal insulation placed over heating elements or in contact therewith shall be noncorrosive, noncombustible, nonconducting material as provided in section 3249 of the N.E.C.

[Rules (part), filed 4/3/61.]

WAC 296-43-050 Heating cables--Elements installed in tanks, troughs, or pipe lines containing liquids. Elements installed in tanks, troughs or pipe lines containing liquids shall be provided with suitable insulating terminating bushings and terminal boxes at the points where the element enters and leaves the tank, trough, or pipe line. Elements so installed shall be secured in a manner maintaining at least 1 in. clearance between turns.

[Rules (part), filed 4/3/61.]

WAC 296-43-060 Heating element in soil or sand. (1) Heating element in soil or sand shall be so spaced that the minimum distance between adjacent turns is not less than 1 in.

(2) Heating elements shall never be placed directly in peat moss or similar material of an insulating nature. Where peat moss or similar material is used, the element shall be protected by a layer of at least 1 in. over and 1 in. under the element, of a heat conducting material such as sand.

(3) Suitable drains for condensation shall be provided at the bottom of all boxes used in greenhouse or hotbed wiring.

(4) Where open wiring is used in greenhouses and hotbeds, the use of nonmetallic boxes and covers is recommended as provided in section 3716 of the N.E.C.

[Rules (part), filed 4/3/61.]

WAC 296-43-070 Heating element imbedded in driveways. Heating elements imbedded in driveways shall conform to the provisions of WAC 296-43-010, 296-43-020 and 296-43-030(3), as applicable.

[Rules (part), filed 4/3/61.]

Chapter 296-44 WAC
SAFETY STANDARDS—ELECTRICAL CONSTRUCTION CODE

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-44-019 Applicability of rules—To construction and reconstruction of lines. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-022 Applicability of rules—Restoration of clearances. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-028 Applicability of rules—Reconstruction or alteration. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-031 Applicability of other standards. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-034 Design, construction and maintenance. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-037 Limiting conditions specified. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-040 Waiving of rules. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-043 Exemptions or modifications. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-046 Emergency. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-049 Saving clause. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-052 Cooperation to avoid conflicts. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-055 Joint use of poles. [§ 2 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-058 Rules covering methods of protective grounding of circuits, equipment, and lightning arresters for stations, lines, and utilization equipment—Scope. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-061 Rules covering methods of protective grounding of circuits, equipment, and lightning arresters for stations, lines, and utilization equipment—Point of attachment of grounding conductor. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-064 Grounding conductor. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-067 Ground connections. [Rule 93C (codified as subsection (4)), filed 10/30/64, effective 12/1/64; Subsections A through D (codified as (1), (2), (3), (4) and (5)), filed 3/23/60, effective 12/1/58; Rule 93C, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-070 Method. [Subsection D (codified as (4)), filed 10/30/64, effective 12/1/64; Subsections A through C (codified as (1), (2), (3)), § 9 (part), filed 3/23/60, effective 12/1/58; Rule 94D, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-073 Ground resistance. [§ 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-076 Separate grounding conductors and grounds. [Subsection B (codified as (2)), filed 10/30/64, effective 12/1/64; Subsections A and B (codified as (1) and (3)), § 9 (part), filed 3/23/60, effective 12/1/58; Rule 96B, § 9 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-079 Protective arrangements of stations and substations—Scope of the rules. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-082 Protective arrangements of stations and substations—General requirements. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-085 Protective arrangements of stations and substations—Illumination. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-088 Protective arrangements of stations and substations—Floors, floor openings, passageways, stairs. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-091 Protective arrangements of stations and substations—Exits. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-094 Protective arrangements of stations and substations—Fire-fighting apparatus. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-097 Protective arrangements of stations and substations—Oil-filled apparatus. [§ 10 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-100 Protective arrangements of equipment—General requirement. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-103 Protective arrangements of equipment—Inspections. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-106 Protective arrangements of equipment—Guarding shaft ends, pulleys, and belts, and suddenly moving parts. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-109 Protective arrangements of equipment—Protective grounding. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-112 Protective arrangements of equipment—Guarding live parts. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-115 Protective arrangements of equipment—Working space about electric equipment. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-118 Protective arrangements of equipment—Hazardous locations. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-121 Protective arrangements of equipment—Shielding of equipment from deteriorating agencies. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-124 Protective arrangements of equipment—Identification. [§ 11 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-127 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Speed-control and stopping devices. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-130 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Guards for live parts. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-133 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Grounding machine frames. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-136 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Deteriorating agencies. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-139 Rotating equipment (this includes generators, motors, motor-generators, and converters)—Motors. [§ 12 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-142 Storage batteries—General. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-145 Storage batteries—Isolation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-148 Storage batteries—Ventilation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-151 Storage batteries—Insulation. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-154 Storage batteries—Racks and trays. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-157 Storage batteries—Floors. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-160 Storage batteries—Wiring in battery rooms. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-163 Storage batteries—Guarding live parts in battery rooms. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-166 Storage batteries—Illumination for battery rooms enclosing batteries of the nonsealed type. [§ 13 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-169 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Current-transformer secondary circuits. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-172 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Grounding secondary circuits of instrument transformers. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-175 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Grounding transformer cases. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-178 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Location and arrangement of power transformers. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-181 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Resistance devices. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-184 Transformers, induction regulators, rheostats, ground detectors, and similar equipment—Ground detectors. [§ 14 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-187 Conductors—Electrical protection. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-190 Conductors—Precaution against mechanical and thermal damage. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-193 Conductors—Isolation. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-196 Conductors—Guarding conductors. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-199 Conductors—Guarding in hazardous locations. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-202 Conductors—Taping ends and joints. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-205 Conductors—Wiring for illumination. [§ 15 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-208 Fuses, circuit-breakers, switches, and controllers—Accessible and indicating. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-211 Fuses, circuit-breakers, switches, and controllers—Oil switches. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-214 Fuses, circuit-breakers, switches, and controllers—Where switches are required. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-217 Fuses, circuit-breakers, switches, and controllers—Switches or other grounding devices. [§ 16 (part),

filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-220 Fuses, circuit-breakers, switches, and controllers—Capacity of switches and disconnectors. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-223 Fuses, circuit-breakers, switches, and controllers—Where fuses or automatic circuit-breakers are required. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-226 Fuses, circuit-breakers, switches, and controllers—Disconnection of fuses before handling. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-229 Fuses, circuit-breakers, switches, and controllers—Arcing or suddenly moving parts. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-232 Fuses, circuit-breakers, switches, and controllers—Grounding noncurrent-carrying metal parts. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-235 Fuses, circuit-breakers, switches, and controllers—Guarding live parts of switches, fuses, and automatic circuit-breakers. [§ 16 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-238 Switchboards—Location and accessibility. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-241 Switchboards—Material and illumination. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-244 Switchboards—Necessary equipment. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-247 Switchboards—Arrangement and identification. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-250 Switchboards—Spacings and barriers against short-circuit. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-253 Switchboards—Switchboard grounding. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-256 Switchboards—Guarding live parts on switchboards. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-259 Switchboards—Instrument cases. [§ 17 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-262 Lightning arresters—Location. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-265 Lightning arresters—Connecting wires. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-268 Lightning arresters—Grounding frames and cases of lightning arresters. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-271 Lightning arresters—Guarding live and arcing parts. [§ 18 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-274 Nature of rules—Minimum requirements. [§ 20 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-277 General requirements applying to overhead and underground lines—Design and construction. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-280 General requirements applying to overhead and underground lines—Installation and maintenance. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-283 General requirements applying to overhead and underground lines—Accessibility. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-286 General requirements applying to overhead and underground lines—Inspection and tests of lines and equipment. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-289 General requirements applying to overhead and underground lines—Isolation and guarding. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-292 General requirements applying to overhead and underground lines—Grounding of circuits and equipment. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-295 General requirements applying to overhead and underground lines—Arrangement of switches. [§ 21 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-298 Relations between various classes of lines—Relative levels. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-301 Relations between various classes of lines—Avoidance of conflict. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-304 Relations between various classes of lines—Joint use of poles by supply and communication circuits. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-307 Relations between various classes of lines—Separate pole lines. [§ 22 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-310 Clearances—General. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-313 Clearances—Horizontal clearances of supporting structures from other objects. [§ 23 (part), filed

3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-316 Clearances—Vertical clearance of wires above ground or rails. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-319 Clearances—Wire-crossing clearances. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-322 Clearances—Clearances of conductors of one line from other conductors and structures. [Tables 4 and 5, filed 10/30/64, effective 12/1/64; § 23 (part), Tables 4 and 5, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-325 Clearances—Minimum line conductor clearances and separations at supports. [Subsections (1)(b)(ii) and (1)(c)(ii), filed 10/30/64, effective 12/1/64; § 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-328 Clearances—Climbing space. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-331 Clearances—Working space. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-334 Clearances—Vertical separation between line conductors, cables, and equipment located at different levels on the same pole or structure. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-337 Clearances—Clearances of vertical and lateral conductors from other wires and surfaces on the same support. [§ 23 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-340 Grades of construction—General. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-343 Grades of construction—Application of grades of construction to different situations. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-346 Grades of construction—Grades of construction for conductors. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-349 Grades of construction—Grades of supporting structures. [§ 24 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-352 Loading for Grades B, C, and D—General loading map. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-355 Loading for Grades B, C, and D—Conductor loading. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-358 Loading for Grades B, C, and D—Loads upon line supports. [§ 25 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-361 Strength requirements—Preliminary assumptions. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-364 Strength requirements—Grades B and C construction. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-367 Strength requirements—Grade D construction. [§ 26 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-373 Line insulators—Application of rule. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-376 Line insulators—Material and marking. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-379 Line insulators—Electrical strength of insulators in strain position. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-382 Line insulators—Ratio of flash-over to puncture voltage. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-385 Line insulators—Test voltages. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-388 Line insulators—Factory tests. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-391 Line insulators—Selection of insulators. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-394 Line insulators—Protection against arcing. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-397 Line insulators—Compliance with WAC 296-44-394 at crossings. [§ 27 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-400 Miscellaneous requirements—Supporting structures for overhead lines. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-403 Miscellaneous requirements—Tree trimming. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-406 Miscellaneous requirements—Guying. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-409 Miscellaneous requirements—Insulators in guys attached to poles and towers. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-412 Miscellaneous requirements—Span-wire insulators. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-415 Miscellaneous requirements—Overhead conductors. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-418 Miscellaneous requirements—Equipment on poles. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-421 Miscellaneous requirements—Protection for exposed overhead communication lines. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-424 Miscellaneous requirements—Circuits of one class used exclusively in the operation of circuits of another class. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-427 Miscellaneous requirements—Overhead electric railway construction. [§ 28 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-430 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Location. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-433 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction of duct and cable systems. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-436 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction of manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-439 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Location of cables. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-442 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Protection and separation of conductors buried in earth. [§ 29 (part), Rule 294, filed 10/30/64, effective 12/1/64; § 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-445 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Protection of conductors in duct systems and manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-448 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Guarding of live parts in manholes. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-451 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Construction at risers from underground. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-454 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Identification of conductors. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-457 Rules for underground lines (see also WAC 296-44-424 (2)(b))—Identification of apparatus connected in multiple. [§ 29 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-460 Installation and maintenance of electric utilization equipment—General requirements—Scope. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-463 Installation and maintenance of electric utilization equipment—General requirements. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-466 Installation and maintenance of electric utilization equipment—Reference to other codes. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-469 Installation and maintenance of electric utilization equipment—Grounding. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-472 Installation and maintenance of electric utilization equipment—Working spaces about electric equipment. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-478 Installation and maintenance of electric utilization equipment—Guarding or isolating live parts. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-481 Installation and maintenance of electric utilization equipment—Hazardous locations. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-484 Installation and maintenance of electric utilization equipment—Protection by disconnection. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-487 Installation and maintenance of electric utilization equipment—Identification of equipment. [§ 30 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-490 Conductors—Electrical protection. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-493 Conductors—Protective covering. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-496 Conductors—Identification of conductors and terminals. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-499 Conductors—Guarding and isolating conductors. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-502 Conductors—Guarding in damp or hazardous locations. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-505 Conductors—Precautions against excessive inductance and eddy currents. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-508 Conductors—Splicing and taping. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-511 Conductors—Uninsulated conductors. [§ 31 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-514 Fuses, circuit-breakers, switches and controllers—General requirements for switches. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-517 Fuses, circuit-breakers, switches and controllers—Hazardous locations. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-520 Fuses, circuit-breakers, switches and controllers—Where switches are required. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-523 Fuses, circuit-breakers, switches and controllers—Character of switches and disconnectors. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-526 Fuses, circuit-breakers, switches and controllers—Disconnection of fuses and thermal cut-outs before handling. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-529 Fuses, circuit-breakers, switches and controllers—Arcing or suddenly moving parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-532 Fuses, circuit-breakers, switches and controllers—Grounding noncurrent-carrying metal parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-535 Fuses, circuit-breakers, switches and controllers—Guarding live parts. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-538 Fuses, circuit-breakers, switches and controllers—Inclosed air-break switches (not including snap switches). [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-541 Fuses, circuit-breakers, switches and controllers—Control equipment. [§ 32 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-544 Switchboards and panelboards—Accessibility and convenient attendance. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-547 Switchboards and panelboards—Location and illumination. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-550 Switchboards and panelboards—Arrangement and identification. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-553 Switchboards and panelboards—Spacing, barriers and covers. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-556 Switchboards and panelboards—Grounding frames. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-559 Switchboards and panelboards—Guarding current-carrying parts. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-562 Switchboards and panelboards—Fuses on switchboards. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-565 Switchboards and panelboards—Panelboards. [§ 33 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-568 Motors and motor-driven machinery—Control devices. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-571 Motors and motor-driven machinery—Hazardous locations. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-574 Motors and motor-driven machinery—Deteriorating agencies. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-577 Motors and motor-driven machinery—Guards for live parts. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-580 Motors and motor-driven machinery—Grounding machine frames. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-583 Motors and motor-driven machinery—Protecting moving parts. [§ 34 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-586 Electric furnaces, storage batteries, transformers, and lightning arresters—Protection from burns. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-589 Electric furnaces, storage batteries, transformers, and lightning arresters—Grounding of furnace frames. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-592 Electric furnaces, storage batteries, transformers, and lightning arresters—Guarding live parts. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-595 Electric furnaces, storage batteries, transformers, and lightning arresters—Storage batteries. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-598 Electric furnaces, storage batteries, transformers, and lightning arresters—Transformers. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007

(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-601 Electric furnaces, storage batteries, transformers, and lightning arresters—Lightning arresters. [§ 35 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-604 Lighting fixtures and signs—Fixtures. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-607 Lighting fixtures and signs—Receptacle for convenience outlet. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-610 Lighting fixtures and signs—Exposed live parts. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-613 Lighting fixtures and signs—Signs. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-616 Lighting fixtures and signs—Connectors for signs. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-619 Lighting fixtures and signs—Lamps in series circuits. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-622 Lighting fixtures and signs—Safe access to arc lamps. [§ 36 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-625 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Insulation. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-628 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Grounding of frames. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-631 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Cable connectors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-634 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Identified conductors, cords, and connectors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-637 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Use of portables and pendants. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-640 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Portable outdoor equipment of more than 750 volts between conductors. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-643 Portable appliances, cables and connectors, and insect eliminators (not including those for communication systems)—Insect eliminators. [§ 37 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-646 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Guarding live and moving parts. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-649 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Grounding noncurrent-carrying parts. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-652 Electrically operated industrial locomotives, cars, cranes, hoists, and elevators—Control of energy supply to cars, cranes, and industrial locomotives. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-655 Control of movement of industrial locomotives, cars, cranes, and elevators. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-658 Control of movement of industrial locomotives, cars, cranes, and elevators—Subway and car lighting. [§ 38 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-661 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Protective requirements. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-664 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Guarding current-carrying parts. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-667 Telephone and other communication apparatus on circuits exposed to supply lines or lightning—Grounding. [§ 39 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-670 Rules for radio and T.V. installations—Scope. [§ 50, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-673 Classification of radio stations. [§ 51, filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-676 Antenna and counterpoise installation—Application of rules. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-679 Antenna and counterpoise installation—General requirements. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-682 Antenna and counterpoise installation—Locations to be avoided. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-685 Antenna and counterpoise installation—Ordinary construction of antenna systems. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007

(Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-688 Antenna and counterpoise installation—Special construction of antenna systems. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-691 Antenna and counterpoise installation—Guarding of antennas. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-694 Antenna and counterpoise installation—Supply circuits as antennas or grounds. [§ 52 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-697 Lead-in conductors—Application of rules. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-700 Lead-in conductors—Material. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-703 Lead-in conductors—Size. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-706 Lead-in conductors—Installation of lead-in conductor. [§ 53 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-709 Construction at building entrance—Application of rules. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-712 Construction at building entrance—Entrance. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-715 Construction at building entrance—Creepage and air-gap distance. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-718 Construction at building entrance—Mechanical protection of bushings. [§ 54 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-721 Protective devices—Application of rules. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-724 Protective devices—Receiving stations. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-727 Protective devices—Low-power transmitting stations. [§ 55 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-730 Protective and operating grounding conductors—Application of rules. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-44-733 Protective and operating grounding conductors—General. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-736 Protective and operating grounding conductors—Material and size. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-739 Protective and operating grounding conductors—Installation of grounding conductors. [§ 56 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-742 Grounds and ground connections—Application of rules. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-745 Grounds and ground connections—Grounds. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-748 Grounds and ground connections—Attachment to pipes. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-751 Grounds and ground connections—Attachment to driven pipes, rods, or buried plates. [§ 57 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-754 Connection to power supply lines—Application of rules. [§ 58 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-757 Connection to power supply lines—Receiving stations and low-power transmitting stations. [§ 58 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-760 Batteries—Application of rules. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-763 Batteries—Care in handling. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-44-766 Batteries—Portable batteries. [§ 59 (part), filed 3/23/60, effective 12/1/58.] Repealed by 86-16-007 (Order 86-26), filed 7/25/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

PART A--INTRODUCTION

WAC 296-44-005 Preface. Pursuant to the provisions of RCW 43.22.050 and 49.17.010 these regulations are adopted to provide safe construction standards. They can contribute materially to the standard of service rendered by the utilities and also for the means of coordination between different types of lines such as power lines. These regulations formulate uniform requirements for electrical construction and installations, the application of which shall ensure adequate service and secure safety to persons engaged in the construction, installation, maintenance, operation, or use of electrical lines and equipment. These regulations are not to be construed as superceding existing statutes relating to electrical construction and installations as in RCW 19.29.010 through 19.29.060. Rules in this code which are mandatory are characterized by the use of the word

"shall." Where a rule is of an advisory nature it is indicated by the use of the word "should." Other practices which are considered desirable and not intended to be mandatory are referred to as recommendations. It is realized that conditions may exist which necessitate departures from such recommendations. Preparation of these revisions was completed through an advisory committee composed of representatives of the electrical utilities and communications companies, and labor, appointed by the assistant director for the department of labor and industries, division of industrial safety and health.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-005, filed 7/25/86; Preface (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-010 Definitions of special terms. (1) "Administrative authority" means the department of labor and industries through the supervisor of the division of safety.

(2) "Alive or live" means electrically connected to a source of potential difference, or electrically charged so as to have a potential different from that of the earth. The term "live" is sometimes used in place of the term "current-carrying," where the intent is clear, to avoid repetitions of the longer term.

(3) "Appliance" means current-consuming equipment, fixed or portable; for example, heating, cooking, and small motor-operated equipment.

(4) "Arm or crossarm" means a horizontal support attached to poles or structures generally at right angles to the conductor supported.

(5) "Arm, buck" means a crossarm used to change the direction of all or part of the conductors on the line arm immediately above or below. A buck arm is generally placed at right angles to the line arm.

(6) "Arm, clearance" means a crossarm supporting conductors installed on a pole of another line for the purpose of maintaining the prescribed clearances of these rules which, if the other line did not exist, could be maintained without such clearance arm.

(7) "Automatic" means self-acting, operating by its own mechanism when actuated by some impersonal influence – as, for example, a change in current strength; not manual, without personal intervention. Remote control that requires personal intervention is not automatic, but manual.

(8) "Bridge" means a structure which is used primarily for foot, vehicular or train traffic as distinguished from those which span certain areas and support signals or wires and which are classed as supporting poles, towers or structures.

(9) "Cable" means a stranded conductor (single conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable).

(10) "Cable vault." (See definition of "manhole.")

(11) "Catenary construction" is that type of construction where an auxiliary wire or messenger is used to assist in supporting in desired alignment trolley contact wire, cables or large conductors that are incapable of supporting themselves in this desired alignment.

(12) "Circuit" means a conductor or system of conductors through which an electric current is intended to flow.

(13) "Circuit breaker" means a device designed to open under abnormal conditions a current-carrying circuit without injury to itself. The term as used in this code applies only to the automatic type designed to trip on a predetermined overload of current.

(14) "Circuits, railway signal" means those supply and communication circuits used primarily for supplying energy for controlling the operation of railway block signals, highway crossing signals, interlocking apparatus and their appurtenances.

(15) "Circuits, supply" means those circuits which are used for transmitting a supply of electrical energy.

(16) "Climbing space" means the space reserved along the surface of a pole or structure to permit ready access for linemen to equipment and conductors located on the pole or structure.

(17) "Common neutral system" is a system in which one conductor is used as the neutral for 2 or more different circuits; one conductor is used as the neutral for both primary and secondary circuits of a distribution system.

(18) "Common use" means simultaneous use by two or more utilities of the same kind.

(19) "Conductor" means a metallic conducting material, usually in the form of a wire or cable, suitable for carrying an electric current. Does not include bus bars.

(20) "Conductor, grounding" means a conductor which is used to connect the equipment or the wiring system with a grounding electrode or electrodes.

(21) "Conductor, lateral" means a conductor extending in a general horizontal direction and usually at an angle of approximately 90 degrees to the direction of the line conductors.

(22) "Conductor, line" means one of the wires or cables carrying electric current, supported by poles, towers, or other structures, but not including vertical or lateral connecting wires.

(23) "Conductors, open" means conductors separately and individually supported.

(24) "Conductors, unprotected" means supply conductors not covered by a "suitable protective covering," grounded metal conduit, grounded metal sheath or shield, or impregnated fiber.

(25) "Conductor, vertical" means, in pole wiring work, a wire or cable extending in an approximately vertical direction.

(26) "Conflict, antenna" means that an antenna or its guy wire is at a higher level than a supply or communication conductor and approximately parallel thereto, provided the breaking of the antenna or its support will be likely to result in contact between the antenna or guy wire and the supply or communication conductor.

(27) "Conflict, conductor" means that a conductor is so situated with respect to a conductor of another line at a lower level that the horizontal distance between them is less than the sum of the following values:

(a) Five feet.

(b) One-half the difference of level between the conductors concerned.

(c) The value required in Tables 6, 7, or 8 (WAC 296-44-325) for horizontal separation between conductors on the same support for the highest voltage carried by either conductor concerned. (See illustration at end of this section.)

(28) "Conflict, structure" (as applied to a pole line) means that the line is so situated with respect to a second line that the overturning (at the ground line) of the first line will result in contact between its poles or conductors and the conductors of the second line, assuming that no conductors are broken in either line. (See illustration at end of this section.)

EXCEPTIONS: Lines are not considered as conflicting under the following conditions:

(a) Where one line crosses another.

(b) Where two lines are on opposite sides of a highway, street, or alley and are separated by a distance not less than 60 percent of the height of the taller pole line and not less than 20 feet.

(29) "Current-carrying part" means a conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent-carrying parts are those not intended to be so connected.

(30) "Dead" means free from any electric connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. The term is used only with reference to current-carrying parts which are sometimes alive.

(31) "Dead end" means the act, point or equipment used to transfer the mechanical tension in conductors from the conductors to noncurrent-carrying parts of a structure used to support the conductors and still maintain the insulating requirements of the conductors dead-ended.

(32) "Device" means a unit of an electric wiring system which is intended to carry but not consume electric energy.

(33) "Disconnector" means a switch which is intended to open a circuit only after the load has been thrown off by some other means.

(34) "Districts, loading" means those areas in which the specified loadings of these rules apply and are known as "heavy," "medium," and "light" loading districts.

(35) "Districts, rural" means all places not urban, usually in the country, but in some cases within city limits.

(36) "District, urban" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in the country, on which the traffic is often very heavy, is considered as urban.

(37) "Division of safety" means the division of safety of the department of labor and industries.

(38) "Duct" means (in underground work) a single tubular runway for underground cables.

(39) "Electrical supply station" means any building, room, or separate space within which electric-supply equipment is located and the interior of which is accessible, as a rule, only to properly qualified persons.

Note: This includes generating stations and substations and generator, storage-battery, and transformer rooms, but excludes manholes and isolated-transformer vaults on private premises. (See definition of "transformer vault.")

(40) "Electrode, grounding" means a suitable metallic conducting material (generally copper or copper clad) imbedded in the earth and used for maintaining ground potential on conductors connected to it and for dissipating into the earth such electric current as may be impressed upon it.

(41) "Equipment" means a general term including fittings, devices, appliances, fixtures, apparatus, and the like, used as a part of, or in connection with, an electric installation.

(42) "Equipment, electric supply" means equipment which produces, modifies, regulates controls, or safeguards a supply of electric energy. Similar equipment, however, is not included where used in connection with signaling systems under the following conditions;

(a) Where the voltage does not exceed 150 volts.

(b) Where the voltage is between 150 and 550 volts, and the power transmitted does not exceed 3.2 kilowatts.

(43) "Equipment, utilization" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(44) "Explosion-proof" means capable of withstanding without injury and without transmitting flame to the outside any explosion of gas which may occur within.

(45) "Exposed":

(a) "Applied to circuits" or lines means in such a position that in case of failure of supports or insulation contact with another circuit or line may result.

(b) "Applied to equipment" means that an object or device can be inadvertently touched or approached nearer than a safe distance by any person. It is applied to objects not suitably guarded or isolated.

(46) "Externally operable" means capable of being operated without exposing the operator to contact with live parts.

Note: This term is applied to equipment, such as a switch, that is inclosed in a case or cabinet.

(47) "Ground connection" means the equipment used in establishing a conducting path between an electric circuit or equipment and earth. A ground connection consists of a ground conductor, a ground electrode and the earth (soil, rock, etc.) which surrounds the electrode.

(48) "Grounded" means connected to earth by a ground connection or by an unintentional conducting path.

(49) "Grounded, effectively" means permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient current-carrying capacity to prevent the building up of voltages which may result in undue hazard to connected equipment or to persons.

(50) "Grounded, system" means a system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current–limiting device.

(51) "Guarded" means covered, shielded, fenced, inclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats or platforms, to remove the liability of dangerous contact or approach by persons or objects to a point of danger.

(52) "Guy" means a tension member (a solid wire or stranded wires) used to withstand an otherwise unbalanced force on a pole, crossarm, or other overhead line structure.

(53) "Guy, anchor" means a guy which has its lower anchorage in the earth and includes a sidewalk or ground guy.

(54) "Guy, overhead (span)" means a guy extending from a pole, crossarm, or structure to a pole, crossarm, or structure.

(55) "Handhole" means an opening in an underground system into which workmen reach, but do not enter.

(56) "Identification" means, for the purpose of these rules, to identify or identification, shall mean that method of coloring, lettering, numbering, marking or maintaining in any certain position in relation to other objects, the same wire, cable pipe, circuit, phases, or other material objects throughout the installation.

(57) "Inclosed" means surrounded by a case which will prevent accidental contact of a person with live parts. A solid inclosure means one which will neither admit accumulations of flyings or dust, nor transmit sparks or flying particles to the accumulations outside.

(58) "Insulated" means separated from other conducting surfaces by a dielectric substance or air space permanently offering a high resistance to the passage of current and to disruptive discharge through the substance or space.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is, within the purpose of these rules, uninsulated. Insulating coverings of conductors is one means for making the conductors insulated.

(59) "Insulating" (where applied to the covering of a conductor, or to clothing, guards, rods, and other safety devices) means that a device, when interposed between a person and current–carrying parts, protects the person making use of it against electric shock from the current–carrying parts with which the device is intended to be used; the opposite of conducting.

(60) "Isolated" means that an object is not readily accessible to persons unless special means for access are used.

(61) "Isolation by elevation" means elevated sufficiently so that persons may safely walk underneath.

(62) "Joint use" means simultaneous use by two or more kinds of utilities.

(63) "Lightning arrester" means a device which has the property of reducing the voltage of a surge applied to its terminals, is capable of interrupting follow current if present, and restores itself to its original operating conditions.

(64) "Lines."

(a) Communication lines means the conductors and their supporting or containing structures which are located outside of buildings and are used for public or private signal or communication service, and which operate at not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When operating at less than 150 volts no limit is placed on the capacity of the system.

Note: Telephone, telegraph, railroad–signal, messenger–call, clock, fire or police–alarm and other systems conforming with the above are included.

Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so run.

Exception is made under certain conditions for communication circuits used in the operation of supply lines. (See WAC 296–44–424(1).)

(b) "Communication lines, minor" means communication lines carrying not more than two circuits used mainly for local telephone or telegraph service, or for police or fire–alarm service.

(c) "Electric supply" means those conductors and their necessary supporting or containing structures which are located entirely outside of buildings and are used for transmitting a supply of electric energy.

Does not include open wiring on buildings, in yards or similar locations where spans are less than 20 feet, and all the precautions required for stations or utilization equipment, as the case may be, are observed.

Railway signal lines of more than 400 volts to ground are always supply lines within the meaning of these rules, and those of less than 400 volts may be considered as supply lines, if so run and operated throughout.

(65) "Low voltage protection" means the effect of a device operative on the reduction or failure of voltage to cause and maintain the interruption of power supply to the equipment protected.

(66) "Low voltage release" means the effect of a device operative on the reduction or failure of voltage to cause the interruption of power supply to the equipment, but not preventing the reestablishment of the power supply on return of voltage.

(67) "Maintenance" means the work done on any line or any element of any line for the purpose of extending its life (excepting the replacement of the supporting poles or structures) and includes the replacement, for any reason, of crossarms, pins, insulators, wires, cables, messengers, etc., but does not contemplate the addition of elements (excepting pole stubs and guy wires) which will change the identity of the structure.

(68) "Manhole" (more accurately termed splicing chamber or cable vault) means an opening in an underground system which workmen or others may enter for the purpose of installing cables, transformers, junction boxes, and other devices, and for making connections and tests.

(69) "Manual" means capable of being operated by personal intervention.

(70) "Messenger" means stranded wire which generally is not a part of the conducting system, its primary function being to support wires or cables of the conducting system; sometimes called "suspension strand."

(71) "Minor tracks" means railway tracks included in the following list:

(a) Spurs less than 2,000 feet long and not exceeding two tracks in the same span.

(b) Branches on which no regular service is maintained or which are not operated during the winter season.

(c) Narrow-gage tracks or other tracks on which standard rolling stock cannot, for physical reasons, be operated.

(d) Tracks used only temporarily for a period not exceeding 1 year.

(e) Tracks not operated as a public utility, such as industrial railways used in logging, mining, etc.

(72) "Multi-grounded system" means a system in which the neutral conductor is grounded at many places.

(73) "Objectionable flow of current," in grounding conductors, means any measurable amount of current flowing to earth which can be attributed to inadequately or improperly installed metallic return to sources of supply.

(74) "Open wire" means a conductor or pair of conductors separately supported above the surface of the ground.

(75) "Panelboard" means a single panel, or a group of panel units designed for assembly in the form of a single panel, including buses and with or without switches and/or automatic overcurrent-protective devices for the control of light, heat, or power circuits of small individual as well as aggregate capacity; designed to be placed in a cabinet or cut-out box placed in or against a wall or partition, and accessible only from the front. (See definition of "switchboard.")

(76) "Pole face" means that side of the pole on which crossarms are attached, or which is so designated by the utilities owning or operating the pole.

(77) "Qualified" means familiar with the construction and operation of the apparatus and the hazards involved.

(78) "Raceway" means any channel for loosely holding wires or cables in interior work, which is designed expressly and used solely for this purpose. Raceways may be of metal, wood, or insulating material, and the term includes wood and metal moldings consisting of a backing and capping, and also metal ducts into which wires are to be pulled.

(79) "Racks, vertical (secondary racks)" for the purpose of these rules shall include individual supports in rack configuration used for the support of conductors of 0 to 750 volts.

(80) "Reconstruction" means replacement of any portion of an existing installation by new equipment or construction. Does not include ordinary maintenance replacements.

(81) "Risers" means conductors which extend below the ground line and are generally installed on the surfaces of poles.

(82) "Sag":

(a) "Apparent sag at any point" means the departure of the wire at the particular point in the span from the straight line between the two points of support of the span, at 60°F, with no wind loading.

(b) "Apparent sag of a span" means the maximum departure of the wire in a given span from the straight line between the two points of support of the span, at 60°F, with no wind loading.

(c) "Final unloaded sag" means the sag of a conductor after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed.

(d) "Initial unloaded sag" means the sag of a conductor prior to the application of any external load.

(e) "Maximum total sag" means the total sag at the midpoint of the straight line joining the two points of support of the conductor.

(f) "Total sag" means the distance measured vertically from any point of a conductor to the straight line joining its two points of support, under conditions of ice loading equivalent to the total resultant loading for the district in which it is located.

(g) "Unloaded sag of a conductor at any point in a span" means the distance measured vertically from the particular point in the conductor to a straight line between two points of support, without any external load.

(83) "Service" means the conductors and equipment for delivering electric energy from the secondary distribution or street main, or other distribution feeder, or from the transformer to the wiring system of the premises served.

(84) "Service drops" means the conductors strung between a pole line and a building or structure.

(85) "Span length" means the horizontal distance between two adjacent supporting points of a conductor.

(86) "Span wire" means a wire or cable used as an auxiliary support for wires, cables, or other equipment. As applied to trolley construction, it means a wire or cable used to support laterally, or which is attached to wires which support laterally, trolley contact conductors and appurtenances in electrical contact therewith, including wires commonly referred to as cross-span wires, bracket-span wires, pull-offs, trolley strain guys, dead ends, etc.

(87) "Splicing chamber." (See definition of "manhole.")

(88) "Substantial" means so constructed and arranged as to be of adequate strength and durability for the service to be performed under the prevailing conditions.

(89) "Supervisor" means the supervisor of the division of safety.

(90) "Switch" means a device for opening and closing or for changing the connection of a circuit. In these rules, a switch will always be understood to be manually operated, unless otherwise stated.

(91) "Switchboard" means a large single panel, frame, or assembly of panels, on which are mounted (on the face, or back, or both) switches, fuses, busses, and usually instruments.

(92) "Tags" means "men at work" tags of distinctive appearance, indicating that the equipment or lines so marked are being worked on.

(93) "Tension":

(a) "Final unloaded conductor tension" means the longitudinal tension in a conductor after the conductor has been stretched by the application for an appreciable period, and subsequent release, of the loadings of ice and wind, and temperature decrease, assumed for the loading district in which the conductor is strung (or equivalent loading).

(b) "Initial conductor tension" means the longitudinal tension in a conductor prior to the application of any external load.

(94) "Transformer vault" means an isolated inclosure either above or below ground with fire-resistant walls, ceiling, and floor, in which transformers and related equipment are installed, and which is not continuously attended during operation.

(95) "Voltage of a circuit" means the highest effective voltage between any two conductors of the circuit concerned.

EXCEPTION: Voltage of a grounded multiwire circuit, not exceeding 750 volts between any two conductors, means the highest effective voltage between any wire of the circuit and that point or conductor of the circuit which is grounded.

If one circuit is directly connected to another circuit of higher voltage (as in the case of an autotransformer), both are considered as of the higher voltage, unless the circuit of lower voltage is effectively grounded, in which case its voltage is not determined by the circuit of higher voltage. Direct connection implies electric connection as distinguished from connection merely through electromagnetic or electrostatic induction.

(96) "Voltage to ground of":

(a) A "grounded circuit" means the highest effective voltage between any conductor of the circuit and that point or conductor of the circuit which is grounded.

(b) An "ungrounded circuit" means the highest effective voltage between any two conductors of the circuit concerned.

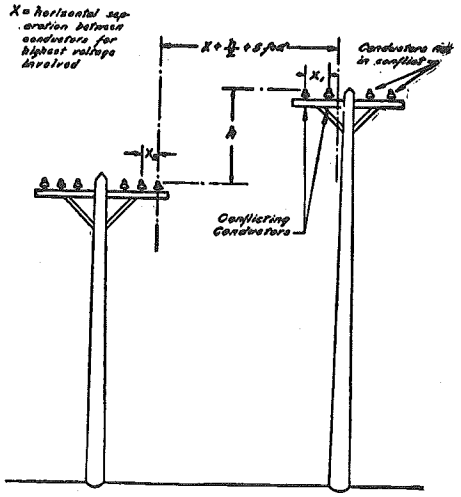
A "conductor of":

(a) A "grounded circuit" means the highest effective voltage between such conductor and that point or conductor of the circuit which is grounded.

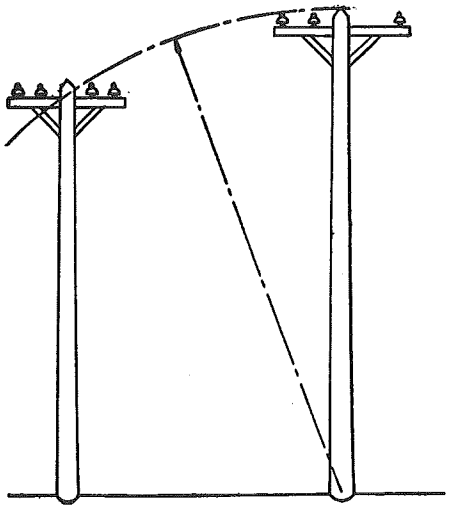
(b) An "ungrounded circuit" means the highest effective voltage between such conductor and any other conductor of the circuit concerned.

(97) "Wire gages": The American Wire Gage (AWG), otherwise known as Brown & Sharpe (B&S), is the standard gage for copper, aluminum, and other conductors, excepting steel, for which the Steel Wire Gage (Stl. WG) is used throughout these rules.

(98) "Working space, lateral" means the space reserved for working between conductor levels outside the climbing space, and to its right and left.



Conductor Conflict



Structure Conflict

[§ 1, filed 3/23/60, effective 12/1/58.]

WAC 296-44-011 Definitions of special terms applicable to this chapter. (1) "Administrative authority" means the department of labor and industries through the assistant director of the division of industrial safety and health.

(2) "Alive or live" means electrically connected to a source of potential difference, or electrically charged so as to have a potential different from that of the earth. The term "live" is sometimes used in place of the term "current-carrying," where the intent is clear, to avoid repetitions of the longer term.

(3) "Appliance" means current-consuming equipment, fixed or portable; for example, heating, cooking, and small motor-operated equipment.

(4) "Approved" means meets or exceeds the recognized standards of safety within the industry.

(5) "Arm or crossarm" means a horizontal support attached to poles or structures generally at right angles to the conductor supported.

(6) "Arm, buck" means a crossarm used to change the direction of all or part of the conductors on the line arm immediately above or below. A buck arm is generally placed at right angles to the line arm.

(7) "Arm, clearance" means a crossarm supporting conductors installed on a pole of another line for the purpose of maintaining the prescribed clearances of these rules which, if the other line did not exist, could be maintained without such clearance arm.

(8) "Automatic" means self-acting, operating by its own mechanism when actuated by some impersonal influence – as, for example, a change in current strength; not manual, without personal intervention. Remote control that requires personal intervention is not automatic, but manual.

(9) "Backfill (noun)" means materials such as sand, crushed stone, or soil, which are placed to fill an excavation.

(10) "Ballast section (railroads)" means the section of material, generally trap rock, which provides support under railroad tracks.

(11) "Bonding" means the electrical interconnecting of conductive parts, designed to maintain a common electrical potential.

(12) "Bridge" means a structure which is used primarily for foot, vehicular, or train traffic as distinguished from those which span certain areas and support signals or wires and which are classed as supporting poles, towers, or structures.

(13) "Cable" means a conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable) or a combination of conductors insulated from one another (multiple-conductor cable).

(14) "Spacer cable" is a type of electric supply line construction consisting of an assembly of one or more covered conductors, separated from each other and supported from a messenger by insulating spacers.

(15) "Cable jacket" means a protective covering over the insulation, core, or sheath of a cable.

(16) "Cable sheath" means a conductive protective covering applied to cables.

Note: A cable sheath may consist of multiple layers of which one or more is conductive.

(17) "Cable terminal" means a device which provides insulated egress for the conductors. Syn: Termination.

(18) "Cable vault." (See definition of "manhole.")

(19) "Catenary construction" is that type of construction where an auxiliary wire or messenger is used to assist in supporting in desired alignment trolley contact wire, cables or large conductors that are incapable of supporting themselves in this desired alignment.

(20) "Circuit" means a conductor or system of conductors through which an electric current is intended to flow.

(21) "Circuit breaker" means a switching device capable of making, carrying and breaking currents under normal circuit conditions and also making, carrying for a specified time, and breaking currents under specified abnormal condition such as those of short circuits.

(22) "Circuits, railway signal" means those supply and communication circuits used primarily for supplying energy for controlling the operation of railway block signals, highway crossing signals, interlocking apparatus and their appurtenances.

(23) "Circuits, supply" means those circuits which are used for transmitting a supply of electrical energy.

(24) "Climbing space" means the space reserved along the surface of a pole or structure to permit ready access for linemen to equipment and conductors located on the pole or structure.

(25) "Common neutral system" is a system in which one conductor is used as the neutral for two or more different circuits; one conductor is used as the neutral for both primary and secondary circuits of a distribution system.

(26) "Common use" means simultaneous use by two or more utilities of the same kind.

(27) "Conductor":

(a) A material, usually in the form of a wire, cable, or bus bar, suitable for carrying an electric circuit.

(b) "Bundled conductor": An assembly of two or more conductors used as a single conductor and employing spacers to maintain a predetermined configuration. The individual conductors of this assembly are called subconductors.

(c) "Covered conductor": A conductor covered with a dielectric having no rated insulating strength or having a rated insulating strength less than the voltage of the circuit in which the conductor is used.

(d) "Grounded conductor": A conductor which is intentionally grounded, either solidly or through a noninterrupting current-limiting device.

(e) "Grounding conductor": A conductor which is used to connect the equipment or the wiring system with a grounding electrode or electrodes.

(f) "Insulated conductor": A conductor covered with a dielectric (other than air) having a rated insulating strength equal to or greater than the voltage of the circuit in which it is used.

(g) "Lateral conductor": A wire or cable extending in a general horizontal direction at an angle to the general direction of the line conductors.

(h) "Line conductor" (overhead supply or communication lines): A wire or cable intended to carry electric currents, extending along the route of the line, supported by poles, towers, or other structures, but not including vertical or lateral conductors.

(i) "Open conductor": A type of electric supply or communication line construction in which the conductors are bare, covered or insulated and without grounding shielding and individually supported at the structure either directly or with insulators. Syn: Open wire.

(j) "Conductor shielding": An envelope which encloses the conductor of a cable and provides an equipotential surface in contact with the cable insulation.

(28) "Conduit" means a structure containing one or more ducts.

Note: Conduit may be designated as iron pipe conduit, tile conduit, etc. If it contains one duct only it is called single–duct conduit; if it contains more than one duct, it is called multiple–duct conduit; usually with the number of ducts as a prefix, for example, two–duct multiple conduit.

(29) "Conduit system" means any combination of duct, conduit, conduits, manholes, handholes, and vaults joined to form an integrated whole.

(30) "Conflict, antenna" means that an antenna or its guy wire is at a higher level than a supply or communication conductor and approximately parallel thereto, provided the breaking of the antenna or its support will be likely to result in contact between the antenna or guy wire and the supply or communication conductor.

(31) "Conflict, conductor" means that a conductor is so situated with respect to a conductor of another line at a lower level that the horizontal distance between them is less than the sum of the following values:

(a) Five feet.

(b) One–half the difference of level between the conductors concerned.

(c) The value required in Tables 6, 7, or 8 for horizontal separation between conductors on the same support for the highest voltage carried by either conductor concerned. (See illustration.)

(32) "Conflict, structure" (as applied to a pole line) means that the line is so situated with respect to a second line that the overturning at the ground line of the first line will result in contact between its poles or conductors and the conductors of the second line, assuming that no conductors are broken in either line. (See illustration.)

Notes:

Lines are not considered as conflicting under the following conditions:

(a) Where one line crosses another.

(b) Where two lines are on opposite sides of a highway, street, or alley and are separated by a distance of not less than sixty percent of the height of the taller pole line and not less than twenty feet.

(33) "Current–carrying part" means a conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent–carrying parts are those not intended to be so connected.

(34) "Dead" means free from any electric connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. The term is used only with reference to current–carrying parts which are sometimes alive.

(35) "Dead end" means the act, point or equipment used to transfer the mechanical tension in conductors from the conductors to noncurrent–carrying parts of a structure used to support the conductors and still maintain the insulating requirements of the conductors dead–ended.

(36) "Deenergized" means free from any electrical connection to a source of potential difference and from electric charge; not having a potential different from that of earth.

(37) "Device" means a unit of an electric wiring system which is intended to carry but not consume electric energy.

(38) "Disconnecting or isolating switch" means a mechanical switching device used for changing the connections in a circuit, or for isolating a circuit or equipment from a source of power.

Note: It is required to carry normal load current continuously, and also abnormal or short–circuit current for short intervals as specified. It is also required to open or close circuits either when negligible current is broken or made, or when no significant change in the voltage across the terminals of each of the switch poles occurs. Syn: Disconnector, isolator.

(39) "Districts, loading" means those areas in which the specified loadings of these rules apply and are known as "heavy," "medium," and "light" loading districts.

(40) "Districts, rural" means all places not urban, usually in the country, but in some cases, within the city limits.

(41) "Districts, urban" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in the country, on which the traffic is often heavy, is considered as urban.

(42) "Division of industrial safety and health" means the division of industrial safety and health of the department of labor and industries.

(43) "Duct" means a single enclosed raceway for conductors or cable.

(44) "Effectively grounded" means intentionally connected to earth through a grounded connection or connections of sufficiently low impedance and having sufficient current–carrying capacity to prevent the build–up of voltages which may result in undue hazard to connected equipment or to persons.

(45) "Electric supply equipment" means equipment which produces, modifies, regulates, controls, or safeguards a supply of electric energy. Syn: Supply equipment.

(46) "Electric supply station" means any building, room, or separate space within which electric–supply equipment is located and the interior of which is accessible, as a rule, only to properly qualified persons.

Note: This includes generating stations and substations and generator, storage–battery, transformer rooms, but excludes manholes and isolated–transformer vaults on private premises. (See definition of transformer vaults.)

(47) "Electrode, grounding" means a suitable metallic conducting material (generally copper or copper clad) imbedded in the earth and used for maintaining ground potential on conductors connected to it and for dissipating into the earth such electric current as may be impressed upon it.

(48) "Energized" means electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.

(49) "Equipment" means a general term including fittings, devices, appliances, fixtures, apparatus, and similar terms used as part of or in connection with an electric supply or communication system.

(50) "Equipment utilization" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(51) "Explosion proof" means capable of withstanding without injury and without transmitting flame to the outside any explosion of gas which may occur within.

(52) "Explosion proof apparatus" means apparatus enclosed in a case that is capable of withstanding an explosion of a specified gas or vapor which may occur within it and of preventing the ignition of a specified gas or vapor surrounding the enclosure by sparks, flashes, or explosion of the gas or vapor within, and which operates at such an external temperature that a surrounding flammable atmosphere will not be ignited thereby.

(53) "Exposed" means not isolated or guarded.

(54) "Externally operable" means capable of being operated without exposing the operator to contact with live parts.

(55) "Fireproofing (of cables)" means the application of a fire–resistant covering.

(56) "Ground connection" means the equipment used in establishing a conducting path between an electric circuit or equipment and earth. A grounded connection consists of a ground conductor, a ground electrode, and the earth (soil, rock, etc.) which surrounds the electrode.

(57) "Grounded" means connected to or in contact with earth or connected to some extended conductive body which serves instead of the earth.

(58) "Grounded effectively" means permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient current–carrying capacity to prevent the build–up of voltages which may result in undue hazard to connected equipment or to persons. (See effectively grounded.)

(59) "Grounded system" means a system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded, either solidly or through a current–limiting device.

(60) "Guarded" means covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats or platforms, designed to minimize the possibility under normal conditions, of dangerous approach or accidental contact by persons or objects.

Note: Wires which are insulated, but not otherwise protected, are not considered as guarded.

(61) "Guy" means a tension member (a solid wire or stranded wires) used to withstand an otherwise unbalanced force on a pole, crossarm, or other overhead line structure.

(62) "Guy, anchor" means a guy which has its lower anchorage in the earth and includes a sidewalk or ground guy.

(63) "Guy, overhead (span)" means a guy extending from a pole, crossarm, or structure to a pole, crossarm, or structure.

(64) "Handhole" means an access opening, provided in equipment or in a below–the–surface enclosure in connection with underground lines, into which workers reach but do not enter, for the purpose of installing, operating, or maintaining equipment or cable or both.

(65) "Identification" means for the purpose of these rules, to identify, or identification shall mean that method of coloring, lettering, numbering, marking, or maintaining in any certain position in relation to other objects, the same wire, cable pipe, circuit, phases, or other objects throughout the installation.

(66) "Inclosed" means surrounded by a case which will prevent accidental contact of a person with live parts. A solid inclosure means one which will neither admit accumulations of flyings or dust, nor transmit sparks or flying particles to the accumulations outside.

(67) "Insulated" means separated from other conducting surfaces by a dielectric substance or air space permanently offering a high resistance to the passage or current and to disruptive discharge through the substance or space.

Note: When any object is said to be insulated, it is understood to be insulated in suitable manner for the conditions to which it is subjected. Otherwise, it is within the purpose of these rules, uninsulated. Insulating coverings of conductors is one means for making the conductors insulated.

(68) "Insulating (where applied to the covering of a conductor, or to clothing, guards, rods, and other safety devices)" means that a device when interposed between a person and current–carrying parts, protects the person making use of it against electric shock from the current–carrying parts with which the device is intended to be used; the opposite of conducting.

(69) "Insulation (as applied to cable)" means that which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

(70) "Insulation shielding" means an envelope which encloses the insulation of a cable and provides an equipotential surface in contact with the cable insulation.

(71) "Insulator" means insulating material in a form designed to support a conductor physically and electrically separate it from another conductor or object.

(72) "Isolated" means that an object is not readily accessible to persons unless special means for access are used.

(73) "Isolated by elevation" means elevated sufficiently so that persons may safely walk underneath.

(74) "Isolator" (See disconnecting or isolating switch.)

(75) "Jacket" means a protective covering over the insulation, core, or sheath of a cable.

(76) "Joint use" means simultaneous use by two or more kinds of utilities.

(77) "Lightning arrester" means a device which has the property of reducing the voltage of a surge applied to its terminals, is capable of interrupting follow current if present and restores itself to its original operating conditions.

(78) "Lines:"

(a) "Communication lines" means the conductors and their supporting or containing structures which are located outside of buildings and are used for public or private signal or communication service, and which operate at not exceeding 400 volts to ground or 750 volts between any two points of the circuit, and the transmitted power of which does not exceed 150 watts. When operating at less than 150 volts no limit is placed on the capacity of the system.

Note: Telephone, telegraph, railroad–signal, messenger–call, clock, fire or police–alarm and other systems conforming with the above are included. Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so run. Exception is made under certain conditions for communication circuits used in the operation of supply lines.

(b) "Electrical supply lines" means those conductors and their necessary supporting or containing structures which are located entirely outside of buildings and are used for transmitting a supply of electric energy.

Note: Does not include open wiring on buildings, in yards or similar locations where spans are less than twenty feet, and all the precautions required for stations or utilization equipment, as the case may be, are observed. Railway signal lines of more than 400 volts to ground are always supply lines within the meaning of these rules; those of less than 400 volts may be considered as supply lines, if so run and operated throughout.

(79) "Low voltage protection" means the effect of a device operative on the reduction or failure of voltage to cause and maintain the interruption of power supply to the equipment protected.

(80) "Low voltage release" means the effect of a device operative on the reduction or failure of voltage to cause the interruption of power supply to the equipment, but not preventing the reestablishment of the power supply on return of voltage.

(81) "Maintenance" means the work done on any line or any element of any line for the purpose of extending its life (excepting the replacement of the supporting poles or structures); includes the replacement, for any reason, of crossarms, pins, insulators, wires, cables, messengers, etc., but does not contemplate the addition of elements (excepting pole stubs and guy wires) which will change the identity of the structure.

(82) "Manhole" means an opening in an underground system which workers or others may enter for the purpose of installing cables, transformers, junction boxes, and other devices, and for making connections and tests.

(83) "Manhole cover" means a removable lid which closes the opening to a manhole or similar subsurface enclosure.

(84) "Manhole grating" means a grid which provides ventilation and a protective cover for a manhole opening.

(85) "Manual" means capable of being operated by personal intervention.

(86) "Messenger" means stranded wire which generally is not a part of the conducting system, its primary function being to support wires or cables of the conducting system; sometimes called "suspension strand."

(87) "Minor tracks" means railway tracks included in the following list:

(a) Spurs less than two thousand feet long and not exceeding two tracks in the same span.

(b) Branches on which no regular service is maintained or which are not operated during the winter season.

(c) Narrow–gage tracks or other tracks on which standard rolling stock cannot, for physical reasons, be operated.

(d) Tracks used only temporarily for a period not exceeding one year.

(e) Tracks not operated as a public utility, such as industrial railways used in logging, mining, etc.

(88) "Multigrounded system" means a system in which the neutral conductor is grounded at many places.

(89) "Objectionable flow of current" in grounding conductors, means any measurable amount of current flowing to earth which can be attributed to inadequately or improperly installed metallic return to sources of supply.

(90) "Open wire" means a conductor or pair of conductors separately supported above the surface of the ground.

(91) "Pad–mounted equipment" is a general term describing enclosed equipment, the exterior of which enclosure is at ground potential, positioned on a surface–mounted pad.

(92) "Panelboard" means a single panel, or a group of panel units designed for assembly in the form of a single panel, including buses and with or without switches and/or automatic overcurrent–protective devices for the control of light, heat, or power circuits of small individual as well as aggregate capacity; designed to be placed in a cabinet or cut–out box placed in or against a wall or partition, and accessible only from the front. (See definition of switchboard.)

(93) "Pole face" means that side of the pole on which crossarms are attached, or which is so designated by the utilities owning or operating the pole.

(94) "Prestressed concrete structures" means concrete structures which include metal tendons that are tensioned and anchored either before or after curing of the concrete.

(95) "Pulling iron" means an anchor secured in the wall, ceiling, or floor of a manhole or vault to attach rigging used to pull cable.

(96) "Pulling tension" is the longitudinal force exerted on a cable during installation.

(97) "Qualified" means a person who is familiar with the construction of, or operation of such lines and/or equipment that concerns his position and who is fully aware of the hazards connected therewith, or, one who has passed a journeyman's examination for the particular branch of the electrical trades with which he may be connected.

(98) "Raceway" means any channel for loosely holding wires or cables in interior work, which is designed expressly and used solely for this purpose. Raceways may be of metal, wood, or insulating material, and the term includes wood and metal moldings consisting of a backing and capping, and also metal ducts into which wires are to be pulled.

(99) "Random separation" means installed with no deliberate separation.

(100) "Racks, vertical (secondary racks)" for the purpose of these rules shall include individual supports in rack configuration used for the support of conductors of 0 to 750 volts.

(101) "Reconstruction" means replacement of any portion of an existing installation by new equipment or construction. Does not include ordinary maintenance replacements.

(102) "Readily climbable" means having sufficient handholds and footholds to permit an average person to climb easily without using a ladder or other special equipment.

(103) "Remotely operable (as applied to equipment)" means capable of being operated from a position external to the structure in which it is installed or from a protected position within the structure.

(104) "Risers" means conductors which extend below the ground line and are generally installed on the surfaces of poles.

(105) "Roadway" means the portion of highway, including shoulders, for vehicular use.

Note: A divided highway has two or more roadways.

(106) "Rural districts": All places not urban. This may include thinly settled areas within the city limits.

(107) "Sag":

(a) The distance measured vertically from a conductor to the straight line joining its two points of support. Unless otherwise stated in the rule, the sag referenced to is the sag at the midpoint of the span.

(b) "Initial unloaded sag": The sag of a conductor prior to the application of any external load.

(c) "Final sag": The sag of a conductor under specified conditions of loading and temperature applied, after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed. Final sag shall include the effect of inelastic deformation (creep).

(d) "Final unloaded sag": The sag of a conductor after it has been subjected for an appreciable period to the loading prescribed for the loading district in which it is situated, or equivalent loading, and the loading removed. Final unloaded sag shall include the effect of inelastic deformation (creep).

(e) "Total sag": The distance measured vertically from the conductor to the straight line joining its two points of support, under conditions of ice loading equivalent to the total resultant loading for the district in which it is located.

(f) "Maximum total sag": The total sag of the midpoint of the straight line joining the two points of support of the conductor.

(g) "Apparent sag of a span": The maximum distance between the wire in a given span and the straight line between the two points of support of the wire, measured perpendicularly from the straight line.

(h) "Sag of a conductor at any point in a span": The distance measured vertically from the particular point in the conductor to a straight line between its two points of support.

(i) "Apparent sag at any point in the span": The distance, at the particular point in the span, between the wire and the straight line between the two points of support of the wire, measured perpendicularly from the straight line.

(108) "Service" means the conductors and equipment for delivering electric energy from the secondary distribution or street main, or other distribution feeder, or from the transformer to the wiring system of the premises served.

(109) "Service drops" means the conductors strung between a pole line and a building or structure.

(110) "Service drop" means the overhead conductors between the electric supply or communication line and the building or structure being served.

(111) "Shoulder" means the portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles for emergency use and for lateral support of base and surface course.

(112) "Side–wall pressure" means the crushing force exerted on a cable during installation.

(113) "Span length" means the horizontal distance between two adjacent supporting points of a conductor.

(114) "Span wire" means a wire or cable used as an auxiliary support for wires, cables, or other equipment. As applied to trolley construction, it means a wire or cable used to support laterally, or which is attached to wires which support laterally, trolley contact conductors and appurtenances in electrical contact therewith, including wires commonly referred to as cross–span wires, bracket–span wires, pull–offs, trolley strain guys, dead ends, etc.

(115) "Splicing chamber." (See definition of "manhole.")

(116) "Structure conflict" means a line is so situated with respect to a second line that the overturning of the first line will result in contact between its supporting structures or conductors and the conductors of the second line, assuming that no conductors are broken in either line.

(117) "Supply equipment." (See electric supply equipment.)

(118) "Supply station." (See electric supply station.)

(119) "Supporting structure" means the main supporting unit (usually a pole or tower).

(120) "Susceptiveness" means the characteristics of a communications circuit including its connected apparatus which determine the extent to which it is adversely affected by inductive fields.

(121) "Switch" means a device for opening and closing or for changing the connection of a circuit. In these rules, a switch will always be understood to be manually operated, unless otherwise stated.

(122) "Switchboard" means a large single panel, frame, or assembly of panels, on which are mounted (on the face, or back, or both) switches, fuses, busses, and usually instruments.

(123) "Tag" means accident prevention tag (DANGER PEOPLE AT WORK, etc.) of a distinctive appearance used

for the purpose of personnel protection to indicate that the operation of the device to which it is attached is restricted.

(124) "Tension":

(a) "Final unloaded conductor tension" means the longitudinal tension in a conductor after the conductor has been stretched by the application for an appreciable period, and subsequent release, of the loadings of ice and wind and temperature decrease, assumed for the loading district in which the conductor is strung (or equivalent loading).

(b) "Initial conductor tension" means the longitudinal tension of a conductor prior to the application of any external load.

(125) "Termination." (See "cable terminal.")

(126) "Transformer vault" means an isolated inclosure either above or below ground with fire-resistant walls, ceiling, and floor, in which transformers and related equipment are installed, and which is not continuously attended during operation.

(127) "Traveled way" means the portion of the roadway for the movement of vehicles, exclusive of shoulders and full-time parking lanes.

(128) "Underground network distribution system" means an underground electrical installation fed from multiple primary sources directly associated with area-wide secondary network connected into a common grid.

(129) "Underground residential distribution system (URD)" means an electrical installation normally fed from a single primary source which may feed one or more transformers with secondaries not connected to a common grid.

(130) "Urban districts" means thickly settled areas (whether in cities or suburbs) or where congested traffic often occurs. A highway, even though in thinly settled areas, on which the traffic is often very heavy, is considered as urban.

(131) "Utility" means an organization responsible for the installation, operation or maintenance of electric supply or communications systems.

(132) "Utility interactive system" means an electric power production system which is operating in parallel with and capable of delivering energy to a utility electric supply system.

(133) "Utilization equipment" means equipment, devices, and connected wiring which utilize electric energy for mechanical, chemical, heating, lighting, testing, or similar purposes and are not a part of supply equipment, supply lines, or communication lines.

(134) "Vault" means an enclosure above or below ground which personnel may enter and is used for the purpose of installing, operating, or maintaining equipment or cable which need not be of a submersible design.

(135) "Voltage" means the effect (rms) potential difference between any two conductors or between a conductor and ground. Voltages are expressed in nominal values unless otherwise indicated. The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The operating voltage of the system may vary above or below this value.

(136) "Voltage of an effectively grounded circuit" means the highest nominal voltage available between any conductor of the circuit and ground unless otherwise indicated.

(137) "Wire gages" means the American Wire Gage (AWG), otherwise known as Brown and Sharpe (B&S), is the standard gage for copper, aluminum, and other conductors, excepting steel, for which the Steel Wire Gage (Stl. WG) is used throughout these rules.

(138) "Working space, lateral" means the space reserved for working between conductor levels outside the climbing space, and to its right and left.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-011, filed 7/25/86.]

WAC 296-44-013 Purpose and scope. (1) The construction standards and requirements included in this vertical chapter shall apply throughout the state wherever construction, maintenance, operation, or use of electrical lines and high voltage equipment takes place within the jurisdiction of the department of labor and industries. Examples include, but are not limited to those specified in WAC 296-44-016.

(2) Operations or conditions not specifically covered by this chapter are subject to all the applicable standards contained in chapter 296-24 WAC, General safety and health standards, chapter 296-62 WAC, General occupational health standards, chapter 296-32 WAC, Safety standards for telecommunications, chapter 296-45 WAC, Electrical workers safety rules, and chapter 296-155 WAC, Safety standards for construction work.

(3) If a provision of this chapter conflicts with a provision of the General safety and health standards chapter 296-24 WAC or the General occupational health standards chapter 296-62 WAC, the provision of this chapter shall prevail.

(4) When a provision of this chapter conflicts with a provision from any chapter of another vertical safety standard applying to the employers' specific type of work place, the provision of the vertical safety standard of specific application shall prevail.

(5) These construction standards, however, are not intended to circumvent the exposure levels or work standards provided for workers in the applicable sections of the standards referenced above.

(6) The safety and health requirements of this chapter do not imply that other safe work practices, procedures, or methods should not be used where such methods, procedures, or practices would tend to prevent accidents. The provisions of this chapter do not relieve the employer and employee of their respective duties to do whatever is reasonable and practicable to avoid causing accidents.

(7) The department's standards and rules shall not be applicable to those operations under the exclusive jurisdiction of the federal government.

(8) When the words "shall" or "must" are used in this chapter, the requirement is compulsory. The words

"may" or "should," as used in this chapter, identify recommendations or suggestions only.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-013, filed 7/25/86; § 2 (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-015 Lines constructed prior to these rules. These rules shall not apply to the use of existing electrical installations during their lifetime provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at the time they were installed, and provided that reconstruction shall conform to the rules as herein provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-015, filed 7/25/86.]

WAC 296-44-016 Applicability. These rules apply to:

(1) All overhead electrical supply and communications lines and equipment located outside of buildings.

(2) Underground lines and equipment.

(3) Stations and substations.

(4) Radio installations.

(5) All other electrical installations which come under the jurisdiction of the department of labor and industries, division of industrial safety and health.

(6) The installation and maintenance of electric utilization equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-016, filed 7/25/86; § 2 (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-017 References. (1) ANSI A12.1-1973, Safety Code for Floor and Wall Openings, Railings, and Toeboards.[3]

(2) ANSI A14.1-1982, Safety Requirements for Portable Wood Ladders.

(3) ANSI A14.2-1982, Safety Requirements for Portable Metal Ladders.

(4) ANSI A14.3-1982, Safety Requirements for Fixed Ladders.

(5) ANSI A14.5-1982, Safety Requirements for Portable Reinforced Plastic Ladders.

(6) ANSI A58.1-1972, Building Code Requirements for Minimum Design Loads in Buildings and Other Structures.

(7) ANSI A92.2-1979, Vehicle Mounted Elevating and Rotating Aerial Devices.

(8) ANSI B15.1-1972, Safety Standard for Mechanical Power Transmission Apparatus.

(9) ANSI C29.1-1982, Test Methods for Electrical Power Insulators.

(10) ANSI C29.2-1982, Wet-Process Porcelain and Toughened Glass Insulators (Suspension Type).

(11) ANSI C29.3-1980, Wet-Process Porcelain Insulators (Spool Type).

(12) ANSI C29.4-1977, Wet-Process Porcelain Insulators (Strain Type).

(13) ANSI C29.5-1977, Wet-Process Porcelain Insulators Low- and Medium-Voltage Pin Type.

(14) ANSI C29.6-1977, Wet-Process Porcelain Insulators, High Voltage Pin Type.

(15) ANSI C29.7-1982, Wet-Process Porcelain Insulators, High Voltage Line-Post Type.

(16) ANSI C84.1-1977, Voltage Ratings for Electric Power Systems and Equipment (60Hz); (includes supplement ANSI C84.1a 1980).

(17) ANSI C92.1-1982, Voltage Values for Preferred Transient Insulation Levels.

(18) ANSI O5.1-1979, Specifications and Dimensions for Wood Poles.

(19) ANSI Z53.1-1979, Safety Color Code for Marking Physical Hazards.

(20) ANSI Z87.1-1979, Practice for Occupational and Educational Eye and Face Protection.

(21) ANSI Z88.2-1980, Practices for Respiratory Protection.

(22) ANSI Z89.1-1981, Safety Requirements for Industrial Headwear.

(23) ANSI Z244.1-1982, Minimum Safety Requirements for Personnel Protection——Lockout/Tagout of Energy Sources.

(24) ANSI/ASTM D12079a, Specification for Rubber Insulating Gloves.

(25) ANSI/ASTM D1050-80, Specifications for Rubber Insulating Line Hose.

(26) ANSI/ASTM F496-80, Specifications for In-Service Care of Insulating Gloves and Sleeves.

(27) ANSI/IEEE Std 100-1977, IEEE Standard Dictionary of Electrical and Electronics Terms.

(28) ANSI/IEEE Std 268-1982, IEEE Standard Metric Practice.

(29) ANSI/NFPA 10-1981, Portable Fire Extinguisher.

(30) ANSI/NFPA 30-1981, Flammable and Combustible Liquids Code.

(31) ANSI/NFPA 70-1981, National Electrical Code.[4]

(32) ANSI/NFPA 77-1977, Recommended Practice on Static Electricity.

(33) ANSI/NFPA 85F-1982, Installation and Operation of Pulverized Fuel Systems.

(34) API RP500, Recommended Practice for Classification of Areas for Electrical Installations in Petroleum Refineries.[5]

(35) ASTM D178-81, Specification for Rubber Insulating Matting.[6]

(36) ASTM D1048-81, Specification for Rubber Insulating Blankets.

(37) ASTM D1049-81, Specification for Rubber Insulating Covers.

(38) ASTM D1051-81, Specification for Rubber Insulating Sleeves.

(39) ASTM F478-81, Specifications for In-Service Care of Insulating Line Hose and Covers.

(40) ASTM F479-81, Specifications for In-Service Care of Insulating Blankets.

(41) IEEE Std 80-1976, Guide for Safety in Substation Grounding.[7]

(42) NFPA 496-1982, Purged Enclosures for Electrical Equipment in Hazardous Locations.[8]

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-017, filed 7/25/86.]

PART B--GROUNDING FOR ELECTRICAL AND COMMUNICATION FACILITIES

WAC 296-44-023 Grounding methods for electric supply and communication facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-023, filed 7/25/86.]

WAC 296-44-02301 Purpose. The purpose of WAC 296-44-02301 through 296-44-02349 is to provide practical methods of grounding, as one of the means of safeguarding employees and the public from injury that may be caused by electrical potential.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02301, filed 7/25/86.]

WAC 296-44-02305 Scope. WAC 296-44-02301 through 296-44-02349 covers methods of protective grounding of supply and communication conductors and equipment. The rules requiring grounding are in other parts of this code.

These rules do not cover the grounded return of electric railways nor those lightning protection wires which are normally independent of supply or communication wires or equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02305, filed 7/25/86.]

WAC 296-44-02309 Point of connection of grounding conductor. (1) Direct current systems which are to be grounded:

(a) 750 volts and below. Connection shall be made only at supply stations. In three-wire direct-current systems the connection shall be made to the neutral.

(b) Over 750 volts. Connection shall be made at both the supply and load stations. The connection shall be made to the neutral of the system. The ground or grounding electrode may be external to or remotely located from each of the stations.

One of the two stations may have its ground connection made through surge arresters provided the other station neutral is effectively grounded as described above.

(2) Alternating current systems which are to be grounded:

(a) 750 volts and below. The point of the grounding connection on a wye-connected three-phase four-wire system, or on a single-phase three-wire system, shall be the neutral conductor. On other one-, two-, or three-phase systems with an associated lighting circuit or circuits, the point of grounding connection shall be on the common circuit conductor associated with the lighting circuits.

The point of grounding connection on three-phase three-wire system, whether derived from a delta connected or an ungrounded wye-connected transformer installation not used for lighting, may be any of the circuit conductors, or it may be a separately derived neutral.

The grounding connections shall be made at the source, and at the line side of all service equipment.

(b) Over 750 volts.

(i) Nonshielded (bare or covered conductors or insulated nonshielded cables).

Grounding connection shall be made at the neutral of the source. Additional connections may be made, if desired, along the length of the neutral, where this is one of the system conductors.

(ii) Shielded.

(A) Surge-arrester cable-shielding interconnection. Cable shielding grounds shall be bonded to surge arrester grounds, where provided, at points where underground cables are connected to overhead lines.

(B) Cable without insulating jacket. Connection shall be made to the neutral of the source transformer and at cable termination points.

(C) Cable with insulating jacket. Additional bonding and connections between the cable insulation shielding or sheaths and the system ground are recommended. In multigrounded shielded cable systems, the shielding (including sheath) shall be grounded at each cable joint exposed to personnel contact. Where multigrounded shielding cannot be used for electrolysis or sheath current reasons, the shielding sheaths and splice enclosure devices shall be insulated for the voltage which may appear on them during normal operation.

Bonding transformers or reactors may be substituted for direct ground connection at one end of the cable.

(I) Separate grounding conductor. If a separate grounding conductor is used as an adjunct to a cable run underground, it shall be connected at the source transformer and at cable accessories where these are to be grounded.

(II) Separate grounding conductor location. This grounding conductor shall be located in the same direct burial or duct bank run (or the same duct if this is of magnetic material) as the circuit conductors.

Note: The grounding conductor for a circuit which is installed in a magnetic duct need not be in the same duct if the duct containing the circuit is bonded to the separate grounding conductor at both ends.

(3) Messenger wires and guys.

(a) Messenger wires. Messenger wires required to be grounded shall be connected to grounding conductors at poles or structures at maximum intervals as listed below:

(i) Where messenger wires are adequate for system grounding conductors (WAC 296-44-02315 (3)(a), (b), and (e)) four connections in each mile.

(ii) Where messenger wires are not adequate for system grounding conductors, eight connections per mile, exclusive of service grounds.

(b) Guys. Guys which are required to be grounded shall be connected to:

(i) Grounded steel structures or to an effective ground connection on wood poles.

(ii) A line conductor which has at least four ground connections in each mile of line in addition to the ground connections at individual services.

(4) Current in grounding conductor. Ground connection points shall be so arranged that under normal circumstances there will be no objectionable flow of current over the grounding conductor. If an objectionable flow of current occurs over a grounding conductor due to the use of multiple grounds, one or more of the following should be used:

(a) Abandon one or more grounds.

(b) Change location of grounds.

(c) Interrupt the continuity of the conductor between ground connections.

(d) Subject to the approval of the administrative authority take other effective means to limit the current.

The system ground of the source transformer shall not be removed.

The temporary currents set up under abnormal conditions while the grounding conductors are performing their intended protective functions are not considered objectionable. The conductor shall have the capability of conducting anticipated fault current without thermal overloading or excessive voltage buildup. Refer to WAC 296-44-02315(3).

(5) Fences. Fences, where required to be grounded by other parts of this code, shall be grounded at or near the location of a supply line or lines crossing them, and additionally, at distances not exceeding one hundred fifty feet on either side. Fences shall also be grounded at each side of a gate or other opening in the fence. Any gate or other opening shall also be bonded across by a buried bonding jumper. A gate shall be metallically connected or bonded to the grounding conductor, jumper, or fence. Separate barbed wire strands above fencing, on nonconducting posts, shall be bonded to metallic fencing or grounding conductors at the grounding points.

Where required to be grounded, fences shall be bonded to the grounding system of the enclosed equipment or to a separate underground conductor below or near the fence line.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02309, filed 7/25/86.]

WAC 296-44-02315 Grounding conductor and means of connection. (1) Composition of grounding conductors. In all cases the grounding conductor shall be made of copper or other metals or combinations of metals which will not corrode excessively during the expected service life under the existing conditions and, if practical, shall be without joint or splice. If joints are unavoidable, they shall be so made and maintained as to not materially increase the resistance of the grounding conductor and shall have appropriate mechanical and corrosion resistant characteristics. For surge arresters and ground detectors, the grounding conductor or conductors shall be as short, straight, and free from sharp bends as practical. The structural metal frame of a building or structure may serve as a grounding conductor to an acceptable grounding electrode.

In no case shall a circuit-opening device be inserted in the grounding conductor or connection except where its operation will result in the automatic disconnection from all sources of energy of the circuit leads connected to the equipment so grounded.

Note: Temporary disconnection of grounding conductors for testing purposes, under competent supervision, shall be permitted.

(2) Connection of grounding conductors. Connection of the grounding conductor shall be made by a means matching the characteristics of both the grounded and grounding conductors, and suitable for the environmental exposure. These means include brazing, welding, mechanical and compression connections, ground clamps, and ground straps. Soldering is acceptable only in conjunction with lead sheaths.

(3) Ampacity and strength. The "short time ampacity" of a bare grounding conductor is that current which the conductor can carry for the time during which the current flows without melting or separating under the applied tensions. If a grounding conductor is insulated, its short time ampacity is the current which it can carry for the applicable time without damaging the insulation. Where grounding conductors at one location are paralleled, the increased total current capacity may be considered.

(a) System grounding conductors for single-grounded systems. The system grounding conductor or conductors for a system with single system grounding electrode or set of electrodes, exclusive of grounds at individual services, shall have a short time ampacity adequate for the fault current which can flow in the grounding conductor or conductors for the operating time of the system protective device. If this value cannot be readily determined, continuous ampacity of the grounding conductor or conductors shall be not less than the full load continuous current of the system supply transformer or other source of supply.

(b) System grounding conductors for multigrounded alternating current systems. The system grounding conductors for an alternating current system with grounds at more than one location exclusive of grounds at individual services shall have continuous total ampacities at each location of not less than one-fifth that of the conductors to which they are attached. (See also subsection (3)(h) of this section.)

(c) Grounding conductors for instrument transformers. The grounding conductor for instrument cases and secondary circuits of instrument transformers shall not be smaller than AWG No. 12 copper or have equivalent ampacity.

(d) Grounding conductors for primary surge arresters. The grounding conductor or conductors shall have adequate short time ampacity under conditions of excess current caused by or following a surge. Individual arrester grounding conductors shall be no smaller than AWG No. 6 copper or AWG No. 4 aluminum.

Note: Arrester grounding conductors may be copper-clad or aluminum-clad steel wire having not less than thirty percent of the conductivity of solid copper or aluminum wire of the same diameter.

Where flexibility of the grounding conductor, such as adjacent to the base of the arrester, is vital to its proper

operation, a suitably flexible conductor shall be employed.

(e) Grounding conductors for equipment, messenger wires, and guys.

(i) Conductors. The grounding conductors for equipment, raceways, cable, messenger wires, guys, sheaths, and other metal enclosures for wires shall have short time ampacities adequate for the available fault current and operating time of the system fault protective device. If no overcurrent or fault protection is provided, the ampacity of the grounding conductor shall be determined by the design and operating conditions of the circuit, but shall not be less than that of AWG No. 8 copper. Where the adequacy and continuity of the conductor enclosures and their attachment to the equipment enclosures is assured, this path can constitute the equipment grounding conductor.

(ii) Connections. Connection of the grounding conductor shall be to a suitable lug, terminal, or device not disturbed in normal inspection, maintenance, or operation.

(f) Fences. The grounding conductor for fences required to be grounded by other parts of this code shall be any of those meeting the requirements of subsection (3)(h) of this section or shall be steel wire not smaller than No. 5 steel wire gauge. It shall be connected to the fence posts with connecting means suitable for the material when the posts are of conducting material. If the posts are of nonconducting material, suitable bonding connections shall be made to the fence mesh strands and the barbed wire strands at each grounding conductor point.

(g) Bonding of equipment frames and enclosures. Where required, a low impedance metallic path shall be provided for the passage of possible conductor or equipment, or both, fault current back to the grounded terminal of the supply, where the supply is local. Where the supply is remote, the metallic path shall interconnect the equipment frames and enclosures with all other nonenergized conducting components within reach and shall additionally be connected to ground as outlined in subsection (3)(h) of this section. Short-time ampacities of bonding conductors shall be adequate for the duty involved.

(h) Ampacity limit. No grounding conductor need have greater ampacity than either:

(i) The phase conductors which would supply the ground fault current, or

(ii) The maximum current which can flow through it to the ground electrode or electrodes to which it is attached. For a single grounding conductor and connected electrode or electrodes, this would be the supply voltage divided by the electrode resistance (approximately).

(i) Strength. All grounding conductors shall have mechanical strength suitable for the conditions to which they may reasonably be subjected.

Further, unguarded grounding conductors shall have a tensile strength not less than that of AWG No. 8 softdrawn copper, except as noted in subsection (3)(c) of this section.

(4) Guarding and protection.

(a) The grounding conductors for single grounded systems and those exposed to mechanical damage shall be guarded. However, grounding conductors need not be guarded where not readily accessible to the public nor where grounding multigrounded circuits or equipment.

(b) Where guarding is required, grounding conductors shall be protected by guards suitable for the exposure to which they may reasonably be subjected. The guards should extend for not less than 8 feet above the ground or platform from which the grounding conductors are accessible to the public.

(c) Where guarding is not required, grounds shall be protected by being substantially attached closely to the surface of the pole or other structure in areas of exposure to mechanical damage and, where practical, on the portion of the structure having least exposure.

(d) Guards used for grounding conductors of lightning protection equipment shall be of nonmagnetic materials if the guard completely encloses the grounding conductor or is not bonded at both ends to the grounding conductor.

(5) Underground.

(a) Grounding conductors laid directly underground shall be laid slack or shall be of sufficient strength to prevent being readily broken by earth movement or settling normal at the particular location.

(b) Direct-buried uninsulated joints or splices in grounding conductors should be welded, brazed, or of the compression type to minimize the possibility of loosening or corrosion. The number of joints or splices should be the minimum practical.

(c) Grounding cable insulation shielding systems shall be interconnected with all other accessible grounded power supply equipment in manholes, handholes, and vaults.

Note: Where cathodic protection or shield cross-bonding is involved, interconnection may be omitted.

(d) Looped magnetic elements such as structural steel, piping, reinforcing bars, etc., should not separate grounding conductors from the phase conductors of circuits they serve.

(e) Metals used for grounding, in direct contact with earth, concrete, or masonry, shall have been proven suitable for such exposure.

Note 1: Under present technology, aluminum has not generally been proven suitable for such use.

Note 2: Metals of different galvanic potentials which are electrically interconnected may require protection against galvanic corrosion.

(f) Sheath transposition connections (cross-bonding).

(i) Where cable insulating shields or sheaths, which are normally connected to ground, are insulated from ground to minimize shield circulating currents, they shall be insulated from personnel contact at accessible locations. Transposition connections and bonding jumpers shall be insulated for nominal 600 volt service, unless the normal shielding voltage exceeds this level, in which case the insulation shall be ample for the working voltage to ground.

(ii) Bonding jumpers and connecting means shall be sized and selected to carry the available fault current without damaging jumper insulation or sheath connections.

(6) Common grounding conductor for circuits, metal raceways, and equipment. Where the ampacity of a supply system grounding conductor is also adequate for equipment grounding requirements, this conductor may be used for the combined purpose. Equipment referred to includes the frames and enclosures of supply system control and auxiliary components, conductor raceways, cable shields, and other enclosures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02315, filed 7/25/86.]

WAC 296-44-02319 Grounding electrodes. The grounding electrode shall be permanent and adequate for the electrical system involved. A common electrode or electrode system shall be employed for grounding the electrical system and the conductor enclosures and equipment served by that system. This may be accomplished by interconnecting these elements at the "point of connection of grounding conductor," WAC 296-44-02309.

Grounding electrodes shall be one of the following:

(1) Existing electrodes. Existing electrodes consist of conducting items installed for purposes other than grounding:

(a) Metallic water piping system. Extensive metallic underground cold water piping systems may be used as grounding electrodes.

Note: Such systems normally have very low resistance to earth and have been extensively used in the past. They are the preferred electrode type where they are readily accessible.

Note: Water systems with nonmetallic noncurrent-carrying pipe or insulating joints are not suitable for use as grounding electrodes.

(b) Local systems. Isolated buried metallic cold water piping connecting to wells having sufficiently low measured resistance to earth may be used as grounding electrodes.

Note: Care should be exercised to insure that all parts that might become disconnected are effectively bonded together.

(c) Steel reinforcing bars in concrete foundations and footings. The reinforcing bar system of a concrete foundation or footing which is not insulated from direct contact with earth, and which extends at least three feet below grade, constitutes an effective and acceptable type of grounding electrode. Where steel supported on this foundation is to be used as a grounding conductor (tower, structure, etc.), it shall be interconnected by bonding between anchor bolts and reinforcing bars or by cable from the reinforcing bars to the structure above the concrete.

The normally applied steel ties are considered to provide adequate bonding between bars of the reinforcing cage.

Note: Where reinforcing bars in concrete are not suitably connected to a metal structure above the concrete, and the latter structure is subjected to grounding discharge currents (even connected to another electrode), there is likelihood of damage to the intervening concrete from ground-seeking current passing through the semi-conducting concrete.

(2) Made electrodes.

(a) General. Where made electrodes are used, they shall as far as practical penetrate into permanent moisture level and below the frostline. Made electrodes shall be of metal or combinations of metals which do not corrode excessively under the existing conditions for the expected service life.

All outer surfaces of made electrodes shall be conductive, that is, not having paint, enamel, or other insulating type covering.

(b) Driven rods. Driven rods may be sectional; the total length shall not be less than eight feet. Driven depth shall be eight feet minimum. The upper end shall be flush with or below the ground level unless suitably protected. Longer rods or multiple rods may be used to reduce the ground resistance. Spacing between multiple rods should not be less than six feet.

Note: Where rock bottom is encountered, driven depth may be less than eight feet or other types of electrode employed.

Iron or steel rods shall have minimum cross-sectional dimension of five-eighths inch. Copper-clad, stainless steel, or stainless steel-clad rods shall have a minimum cross-sectional dimension of one-half inch.

(c) Buried wire, strips, or plates. In areas of high soil resistivity or shallow bedrock, or where lower resistance is required than attainable with driven rods, one or more of the following electrodes may be more useful:

(i) Wire. Bare wires 0.162 inch in diameter or larger, conforming to WAC 296-44-02315 (5)(e), buried in earth at a depth not less than eighteen inches and not less than one hundred feet total in length, laid approximately straight, constitutes an acceptable made electrode. (This is frequently designated a "counterpoise.") The wire may be in a single length, or may be several lengths connected at ends or at some point away from the ends. The wire may take the form of a network with many parallel wires spaced in two-dimensional array, referred to as a grid.

Note 1: Where rock bottom is encountered, burial depth may be less than eighteen inches.

Note 2: Other lengths or configurations may be used if their suitability is supported by a qualified engineering study.

(ii) Strips. Strips of metal not less than ten feet in total length and with total (two sides) surface not less than five square feet buried in soil at a depth not less than eighteen inches constitute an acceptable made electrode. Ferrous metal electrodes shall be not less than one-fourth inch in thickness and nonferrous metal electrodes not less than 0.06 inches.

Note: Strip electrodes are frequently useful in rocky areas where only irregularly shaped pits are practical to excavate.

(iii) Plates or sheets. Metal plates or sheets having not less than two square feet of surface exposed to the soil, and at a depth of not less than five feet, constitute an acceptable made electrode. Ferrous metal electrodes shall be not less than one-fourth inch in thickness and nonferrous metal electrodes not less than 0.06 inches.

(d) Pole butt plates and wire wraps.

(i) General. In areas of very low soil resistivity there are two constructions, described in specifications (ii) and (iii) below, which may provide effective grounding electrode functions although they are inadequate in most other locations. Where these have been proven to have adequately low earth resistance by the application of WAC 296-44-02329, two such electrodes may be counted as one made electrode and ground for application of WAC 296-44-02309 (3)(a), (3)(b)(ii), 296-44-02335(3) and 296-44-02329(3); however, these types shall not be the sole grounding electrode at transformer locations.

(ii) Pole butt plates. Subject to the limitations of WAC 296-44-02319 (2)(d), a pole butt plate on the base of a wooden pole, possibly folded up around the base of the pole butt, may be considered an acceptable electrode in locations where the limitations of WAC 296-44-02329 are met. The plates shall be not less than one-fourth inch thick if of ferrous metal and not less than 0.06 inch thick if of nonferrous metal. Further, the minimum plate area exposed to the soil shall be 0.5 square feet.

(iii) Wire wrap. Subject to the limitations of WAC 296-44-02319 (2)(a), made electrodes may be wire attached to the pole previous to the setting of the pole. The wire shall be of copper or other metals which will not corrode excessively under the existing conditions and shall have a continuous bare or exposed length below ground level of not less than twelve feet, shall extend to the bottom of the pole, and shall not be smaller than AWG No. 6.

(e) Concentric neutral cable. Systems employing extensive (one hundred feet minimum length) buried bare concentric neutral cable in contact with the earth may employ the concentric neutral as a grounding electrode. The concentric neutral may be covered with a semi-conducting jacket which has a radial resistivity not exceeding one hundred meter ohms and which will remain essentially stable in service. The radial resistivity of the jacket material is that value calculated from measurements on a unit length of cable, of the resistance between the concentric neutral and a surrounding conducting medium. Radial resistivity equals resistance of unit length times the surface area of jacket divided by the average thickness of the jacket over the neutral conductors. All dimensions are to be expressed in meters.

(f) Concrete-encased electrodes. A metallic wire, rod, or structural shape, meeting WAC 296-44-02315 (5)(e) and encased in concrete which is not insulated from direct contact with earth shall constitute an acceptable ground electrode. The concrete depth below grade shall be not less than one foot, and a depth of two and one-half feet is recommended. Wire shall be no smaller than AWG No. 4 if copper, or three-eighths inch diameter if steel. It shall be not less than twenty feet long, and shall remain entirely within the concrete except for the external connection. The conductor should be run as straight as practical.

The metal elements may be composed of a number of shorter lengths arrayed within the concrete and connected together (for example, the reinforcing system in a structural footing).

Note: Other wire length or configurations may be used if their suitability is supported by a qualified engineering study.

Note 1: The lowest resistance per unit wire length will result from a straight wire installation.

Note 2: The outline of the concrete need not be regular, but may conform to an irregular or rocky excavation.

Note 3: Concrete encased electrodes are frequently more practical or effective than driven rods or strips or plates buried directly in earth.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02319, filed 7/25/86.]

WAC 296-44-02323 Method of connection to electrode. (1) Ground connections. The ground connections shall be as accessible as practical and shall be made to the electrode by methods providing the required permanence and ampacity, such as:

(a) A permanently effective clamp, fitting, braze, or weld.

(b) A bronze plug which has been tightly screwed into the electrode.

(c) For steel-framed structures employing a concrete-encased reinforcing bar electrode, a steel rod similar to the reinforcing bar shall be used to join, by welding, a main vertical reinforcing bar to an anchor bolt. The bolt shall be substantially and permanently connected to the baseplate of the steel column supported on that footing. The electrical system may then be connected (for grounding) to the building frame by welding or by a bronze bolt tapped into a structural member of that frame.

(d) For nonsteel frame structures employing a concrete-encased rod or wire electrode, an insulated copper conductor of size meeting the requirements of WAC 296-44-02315(3) (except not smaller than AWG No. 4) shall be connected to the steel rod or wire using a cable clamp suitable for steel cable. This clamp and all the bared portion of the copper conductor including ends of exposed strands within the concrete shall be completely covered with mastic or sealing compound before concrete is poured to minimize the possibility of galvanic corrosion. The copper conductor end shall be brought to or out of the concrete surface at the required location for connection to the electrical system. If the copper wire is carried beyond the surface of the concrete, it shall be no smaller than AWG No. 2.

Alternatively, the copper wire may be brought out of the concrete at the bottom of the hole and carried external to the concrete for surface connection.

(2) Point of connection to piping systems.

(a) The point of connection of a grounding conductor to a metallic water piping system shall be as near as is practical to the water-service entrance to the building or near the equipment to be grounded and shall be accessible. If a water meter is between the point of connection and the underground water pipe, the metallic water piping system shall be made electrically continuous by

bonding together all parts between the connection and the pipe entrance which may become disconnected, such as meters and service unions.

(b) Made grounds or grounded structures should be separated by ten feet or more from pipelines used for the transmission of flammable liquids or gases operating at high pressure (one hundred fifty pounds per square inch or greater) unless they are electrically interconnected and cathodically protected as a single unit. Grounds within ten feet of such pipelines should be avoided or shall be coordinated so that hazardous alternating current conditions will not exist and cathodic protection of the pipeline will not be nullified.

(3) Contact surfaces. If any coating of nonconducting material, such as enamel, rust, or scale, is present on electrode contact surfaces, at the point of connection, such a coating shall be thoroughly removed where required to obtain the requisite good connection. Special fittings so designed as to make such removal of nonconducting coatings unneccessary may also be used.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02323, filed 7/25/86.]

WAC 296-44-02329 Ground resistance. Requirements. The grounding electrode system may consist of one or more interconnected electrodes. It shall have a resistance to ground low enough to minimize hazards to personnel and to permit prompt operation of circuit protective devices.

(1) Supply stations. Where very high voltages and currents are involved, such as in large substations, extensive grounding grid systems of multiple buried wires and rods and other protective means may be required.

Note: It is recommended that the combination of maximum local ground fault current and impedance of the grounding system not exceed values which will limit exposure potentials to the following:

$$E_{step} = (1000 + 6\rho s)\frac{0.116}{\sqrt{t}}$$

$$E_{touch} = (1000 + 1.5\rho s)\frac{0.116}{\sqrt{t}}$$

where

E_{step} maximum tolerable voltage difference between any two points on the ground surface which can be touched simultaneously by two (separated) feet

E_{touch} maximum tolerable voltage difference between any point on the ground where a man may stand and any point which can be touched simultaneously by either hand

ps resistivity of the soil near the surface in ohm-meters (divide the ohm-centimeter value by one hundred to obtain this)

t time of exposure in seconds (clearing time of system overcurrent equipment)

(2) Single grounded (unigrounded or delta) systems. Individual made electrodes shall, where practical, have a resistance to ground not exceeding twenty-five ohms. If a single electrode resistance exceeds twenty-five ohms, two electrodes connected in parallel shall be used.

(3) Multiple grounded systems. The neutral, which shall be of sufficient size and ampacity for the duty involved, shall be connected to made electrodes at each transformer location and at a sufficient number of additional points to total not less than four grounds in each mile of line, not including grounds at individual services.

Note: Multiple grounding systems extending over a substantial distance are more dependent on the multiplicity of grounding electrodes than on the resistance to ground of any individual electrode. Therefore, no specific values are imposed for the resistance of individual electrodes.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02329, filed 7/25/86.]

WAC 296-44-02335 Separation of grounding conductors. (1) Except as permitted in subsection (2) of this section grounding conductors from equipment and circuits of each of the following classes shall be run separately to the grounding electrode for each of the following classes:

(a) Surge arresters of circuits over 750 volts, and frames of any equipment operating at over 750 volts.

(b) Lighting and power circuits under 750 volts.

(c) Lightning rods, unless attached to a grounded metal supporting structure.

Alternatively, the grounding conductors shall be run separately to a sufficiently heavy ground bus or system ground cable which is well connected to ground at more than one place.

(2) The grounding conductors of either of the equipment classes detailed in subsection (1)(a) and (b) of this section may be interconnected utilizing a single grounding conductor, provided:

(a) There is a direct earth grounding connection at each arrester location.

(b) The secondary neutral is common with, or connected to, a primary neutral meeting the grounding requirements of subsection (3) of this section.

(3) Primary and secondary circuits utilizing a single conductor as a common neutral shall have at least four ground connections on such conductor in each mile of line, exclusive of ground connections at customers' service equipment.

(4) Ungrounded or single grounded systems and multiple grounded systems.

(a) Ungrounded or single grounded systems. Where the secondary neutral is not interconnected with the primary surge arrester grounding conductor as in subsection (2) of this section, interconnection may be made through a spark gap or device which performs an equivalent function. The gap or device shall have a 60 Hz breakdown voltage of at least twice the primary circuit voltage but not necessarily more than 10kV. At least one other grounding connection on the secondary neutral shall be provided with its grounding electrode located at a distance of not less than twenty feet from the surge

arrester grounding electrode in addition to customers' grounds at each service entrance.

(b) Multiple grounded systems. On multiple grounded systems the primary and secondary neutrals should be interconnected according to subsection (2) of this section. However, where it is necessary to separate the neutrals, interconnection of the neutrals shall be made through a spark gap or a device which performs an equivalent function. The gap or device shall have a 60 Hz breakdown voltage not exceeding 3 kV. At least one other grounding connection on the secondary neutral shall be provided with its grounding electrode located at a distance not less than six feet from the primary neutral and surge arrester grounding electrode in addition to the customers' grounds at each service entrance. Since a different potential can exist where primary and secondary neutrals are not directly interconnected, the secondary grounding conductor shall be insulated for 600 V.

(5) Where separate electrodes are used for system isolation, separate grounding conductors shall be used. Where multiple electrodes are used to reduce grounding resistance, they may be bonded together and connected to a single grounding conductor.

(6) Made electrodes used for grounding surge arresters of ungrounded supply systems operated at potentials exceeding 15 kilovolts phase to phase should be located at least twenty feet from buried communications cables. Where lines with lesser separations are to be constructed, reasonable advance notice should be given to the owners or operators of the affected systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02335, filed 7/25/86.]

WAC 296-44-02349 Grounding methods for telephone and other communication apparatus on circuits exposed to supply lines or lightning. Protectors and, where required, exposed noncurrent-carrying metal parts located in central offices or outside installations shall be grounded in the following manner:

(1) Electrode. The grounding conductor shall be connected to an acceptable grounding electrode as described in WAC 296-44-02319, with the following additions and exception:

(a) Connection may be made to the metallic supply, service conduit, service-equipment enclosure, or grounding electrode conductor where the grounded conductor of the supply service is connected to an acceptable water pipe electrode at the building.

(b) Where the grounding means in WAC 296-44-02319 (1)(a) and this section are not available, the grounding conductor shall be connected to the metallic supply service conduit, service-equipment enclosure, grounding electrode conductor, or grounding electrode of the supply service of a multigrounded neutral power supply.

Note: A variance to WAC 296-44-02319 (2)(b) is allowed for this application. Iron or steel rods may have a minimum cross-sectional dimension of one-half inch and a length of five feet. The driven depth shall be five feet subject to the exception of WAC 296-44-02319 (2)(b).

(2) Electrode connection. The grounding conductor shall preferably be made of copper (or other material which will not corrode excessively under the prevailing conditions of use) and shall be not less than AWG No. 14 (0.064 inch) in size. The grounding conductor shall be attached to the electrode by means of a bolted clamp or other suitable methods.

(3) Bonding of electrodes. A bond not smaller than AWG No. 6 (0.162 inch) copper or equivalent shall be placed between the communication grounding electrode and the supply system neutral grounding electrode where separate electrodes are used in or on the same building or structure.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-02349, filed 7/25/86.]

WAC 296-44-025 Applicability of rules--Lines constructed prior to these rules. These rules shall not apply to the use of existing electrical installations during their lifetime provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at the time they were installed, and provided that reconstruction shall conform to the rules as herein provided.

[§ 2 (part), filed 3/23/60, effective 12/1/58.]

PART C--RULES FOR THE INSTALLATION AND MAINTENANCE OF ELECTRIC SUPPLY STATIONS AND EQUIPMENT

WAC 296-44-035 Rules for the installation and maintenance of electric supply stations and equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-035, filed 7/25/86.]

WAC 296-44-03505 Purpose. The purpose of WAC 296-44-03505 through 296-44-13431 is the practical safeguarding of persons during the installation, operation, or maintenance of electric supply stations and their associated equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-03505, filed 7/25/86.]

WAC 296-44-03509 Scope. WAC 296-44-03505 through 296-44-13431 covers the electric supply conductors and equipment, along with the associated structural arrangements in electric supply stations, which are accessible only to qualified personnel. It also covers the conductors and equipment employed primarily for the utilization of electric power when such conductors and equipment are used by the utility in the exercise of its function as a utility.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-03509, filed 7/25/86.]

WAC 296-44-041 Protective arrangements in electric supply stations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-041, filed 7/25/86.]

WAC 296-44-04105 General requirements. (1) Enclosure of equipment. Rooms and spaces in which electric supply conductors or equipment are installed shall be so arranged with fences, screens, partitions or walls as to minimize the possibility of entrance of unauthorized persons or interference by them with equipment inside. Entrances not under observation of an authorized attendant shall be kept locked.

Warning signs shall be displayed at entrances.

Metal fences when used to enclose electric supply stations having energized electrical conductors or equipment shall have a minimum height of eight feet overall and shall be grounded in accordance with WAC 296-44-023.

The requirements for fence height may be satisfied with any one of the following:

(a) Fence fabric, eight feet or more in height.

(b) A combination of seven feet or more of fence fabric and a one foot extension utilizing three or more strands of barbed wire.

(c) Other types of construction, such as nonmetallic material, which present equivalent barriers to climbing or other unauthorized entry.

(2) Rooms and spaces. All rooms and spaces in which electric supply equipment is installed shall comply with the following requirements.

(a) Construction. They shall be as much as practical noncombustible.

(b) Use. They should be as much as practical free from combustible materials, dust, and fumes and shall not be used for manufacturing or for storage, except for minor parts essential to the maintenance of the installed equipment. (For battery areas, see WAC 296-44-074, for auxiliary equipment in classified locations, see WAC 296-44-05137.)

(c) Ventilation. There should be sufficient ventilation to maintain operating temperatures within ratings, arranged to minimize accumulation of airborne contaminants under any operating conditions.

(d) Moisture and weather. They should be dry. In outdoor stations or stations in wet tunnels, subways or other moist or high humidity locations, the equipment shall be suitably designed to withstand the prevailing atmospheric conditions.

(3) Electric equipment. To minimize movement, all stationary equipment shall be supported and secured in place in a manner consistent with its conditions of service.

Note: In areas of limited seismic activity, some equipment such as transformers may be considered as secured in place by their own weight; equipment which tends to move during operation, such as circuit breakers and rotating equipment, are considered to require appropriate additional measures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04105, filed 7/25/86.]

WAC 296-44-04109 Illumination. (1) Under normal conditions. Rooms and spaces shall have means for artificial illumination. The illumination levels listed in Table 041-1 are the minimum footcandles for safety to be maintained on the task.

(2) Emergency lighting.

(a) A separate emergency source of illumination with automatic initiation, from an independent generator, storage battery or other suitable source, shall be provided in every attended station.

(b) Emergency lighting of three footcandles shall be provided in exit paths from all areas of attended stations. Consideration must be given to the type of service to be rendered whether of short time or long duration. The minimum duration shall be one and one-half hours. It is recommended that emergency circuit wiring shall be kept independent of all other wiring and equipment.

(3) Fixtures. Arrangements for permanent fixtures and plug receptacles shall be such that portable cords need not be brought into dangerous proximity to live or moving parts. All lighting shall be controlled and serviced from safely accessible locations.

(4) Attachment plugs and receptacles for general use. Portable conductors shall be attached to fixed wiring only through separable attachment plugs which will disconnect all poles by one operation. Receptacles installed on two or three wire single phase, ac branch circuits shall be of the grounding type. Receptacles connected to circuits having different voltages, frequencies or types of current (ac or dc) on the same premises shall be of such design that attachment plugs used on such circuits are not interchangeable.

(5) Receptacles in damp or wet locations. All 120 V ac permanent receptacles shall either be provided with ground fault interrupter (GFI) protection, or be on a grounded circuit which is tested at such intervals as experience has shown to be necessary.

Table 041-1 Illumination Levels

Location	Minimum Footcandles
Central station	
Air conditioning equipment, air preheater and fan floor, ash sluicing	5
Auxiliaries, battery areas, boiler feed pumps, tanks, compressors, gage area	10
Boiler platforms	5
Burner platforms	10
Cable room, circulator, or pump bay	5
Chemical laboratory	25
Coal conveyor, crusher, feeder, scale areas, pulverizer, fan area, transfer tower	5
Condensers, deaerator floor, evaporator floor, heater floors	5
Control rooms	
Vertical face of switchboards	
Simples or section of duplex operator:	
Type A—Large centralized control room 66 inches above floor	25
Type B—Ordinary control room 66 inches above floor	15
Section of duplex facing away from operator	15
Bench boards (horizontal level)	25
Area inside duplex switchboards	5
Rear of all switchboard panels (vertical)	5

Table 041-1 Illumination Levels

Location	Minimum Footcandles
Dispatch boards	
Horizontal plane (desk level)	25
Vertical face of board (48 inches) above floor, facing operator:	
System load dispatch room	25
Secondary dispatch room	15
Hydrogen and carbon dioxide manifold area	10
Precipitators	5
Screen house	10
Soot or slag blower platform	5
Steam headers and throttles	5
Switchgear, power	10
Telephone equipment room	10
Tunnels or galleries, piping	5
Turbine bay subbasement	10
Turbine room	15
Visitor's gallery	10
Water treating area	10
Central station (exterior)	
Catwalks	5
Cinder dumps	5
Coal storage area	5
Coal unloading	
Dock (loading or unloading zone)	5
Barge storage area	5
Car dumper	5
Tipple	5
Conveyors	5
Entrances	
Generating or service building	
Main	10
Secondary	5
Gate house	
Pedestrian entrance	10
Conveyor entrance	5
Fence	5
Fuel-oil delivery headers	5
Oil storage tanks	5
Open yard	5
Platforms—Boiler, turbine deck	5
Roadway	
Between or along buildings	5
Not bordered by buildings	5
Substation	
General horizontal	5
Specific vertical (on disconnects)	5

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04109, filed 7/25/86.]

WAC 296-44-04125 Floor, floor openings, passageways, stairs. (1) Floors. Floors shall have even surfaces and afford secure footing. Slippery floors or stairs should be provided with antislip covering.

(2) Passageways. Passageways, including stairways, shall be unobstructed and shall, where practical, provide at least seven feet headroom. Where the preceding requirements are not practical, the obstructions should be painted, marked or indicated by warning signs and the area properly lighted.

(3) Railings. All floor openings without gratings or other adequate cover and raised platforms and walkways in excess of one foot in height shall be provided with railings. Openings in railings for units such as fixed ladders, cranes, and the like shall be provided with adequate guards such as grates, chains, or sliding pipe sections.

(4) Stair guards. All stairways consisting of four or more risers shall be provided with handrails.

Note: For additional information see ANSI A12.1-1973[1].[9]

(5) Top rails. All top rails shall be kept unobstructed for a distance of three inches in all directions except from below at supports.

[9]The numbers in brackets correspond to those in the references of WAC 296-44-017.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04125, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-04129 Exits. (1) Clear exits. Each room or space and each working space about equipment shall have a means of exit which shall be kept clear of all obstructions. Exit doors shall swing out and be equipped with panic bars, pressure plates, or other devices that are normally latched but open under simple pressure.

Note: This rule does not apply to gates in fences for outdoor equipment installations.

(2) Double exits. If the plan of the room or space and the character and arrangement of equipment are such that an accident would be likely to close or make inaccessible a single exit, a second exit shall be provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04129, filed 7/25/86.]

WAC 296-44-04135 Fire extinguishing equipment. Fire extinguishing equipment shall be portable and installed in accordance with WAC 296-24-590.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-04135, filed 7/25/86.]

WAC 296-44-051 Installation and maintenance of equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-051, filed 7/25/86.]

WAC 296-44-05105 General requirements. All electric equipment shall be constructed, installed, and maintained so as to safeguard personnel as far as practical.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05105, filed 7/25/86.]

WAC 296-44-05109 Inspections. (1) In-service equipment. Electric equipment shall be inspected and maintained at such intervals as experience has shown to be necessary. Equipment or wiring found to be defective shall be put in good order or permanently disconnected.

(2) Idle equipment. Infrequently used equipment or wiring shall be inspected and tested before use to determine its fitness for service. Idle equipment energized but not connected to a load shall be inspected and maintained at such intervals as experience has shown to be necessary.

(3) Emergency equipment. Equipment and wiring maintained for emergency service shall be inspected and tested at such intervals as experience has shown to be necessary to determine its fitness for service.

(4) New equipment. New equipment shall be inspected and tested before being placed in service.

Note: The equipment to be tested does not include fittings, devices, appliances, fixtures or other hardware.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05109, filed 7/25/86.]

WAC 296-44-05115 Guarding shaft ends, pulleys, belts and suddenly moving parts. (1) Mechanical transmission machinery. The methods for safeguarding pulleys, belts and other equipment used in the mechanical transmission of power shall be in accordance with ANSI B15.1-1972 [8].

(2) Suddenly moving parts. Parts of equipment which move suddenly in such a way that persons in the vicinity are likely to be injured by such movement, shall be guarded or isolated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05115, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-05119 Protective grounding. (1) Protective grounding or physical isolation of noncurrent-carrying metal parts. All electric equipment shall have the exposed noncurrent-carrying metal parts, such as frames of generators and switchboards, cases of transformers, switches and operating levers effectively grounded or physically isolated. All metallic guards including rails, screen fences, etc. about electric equipment shall be effectively grounded.

(2) Grounding method. All grounding which is intended to be a permanent and effective protective measure, such as surge arrester grounding, grounding of circuits, equipment, or wire raceways, shall be made in accordance with the methods specified in WAC 296-44-023.

Note: For additional information see IEEE Std. 80-1976[41].

(3) Provision for grounding equipment during maintenance. Electric equipment or conductors normally operating at more than 600 V between conductors, on or about which work is occasionally done while isolated from a source of electric energy by disconnecting or isolating switches only, shall be provided with some means for grounding, such as switches, connectors or a readily accessible means for connecting a portable grounding conductor. When necessary, grounding may be omitted on conductors normally operating at 25 kV or less and not influenced by higher voltage conductors, where visible openings in the source of supply are available and are properly tagged in the open position.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05119 filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-05125 Guarding live parts. (1) Where required.

(a) Guards shall be provided around all live parts operating above 150 V to ground without an adequate insulating covering, unless their location gives sufficient horizontal or vertical or a combination of these clearances to minimize the possibility of accidental human contact. Clearances from live parts to any permanent supporting surface for workers shall equal or exceed either of those shown in Table 051-1 and illustrated in Figure 051.1.

(b) Parts over or near passageways through which material may be carried, or in or near spaces such as corridors, storerooms and boiler rooms used for nonelectrical work shall be guarded or given clearances in excess of those specified such as may be necessary to secure reasonable safety. The guards shall be substantial and completely shield or enclose the live parts without openings. In spaces used for nonelectrical work, guards should be removable only by means of tools or keys.

(c) Parts of indeterminate potential, such as telephone wires exposed to induction from high voltage lines, ungrounded neutral connections, ungrounded frames, ungrounded parts of surge arresters, or ungrounded instrument cases connected directly to a high voltage circuit, shall be guarded on the basis of the maximum voltage which may be present.

(2) Strength of guards. Guards shall be sufficiently strong and shall be supported rigidly and securely enough to prevent them from being displaced or dangerously deflected by a person slipping or falling against them.

(3) Types of guards.

(a) Location or physical isolation. Parts having clearances equal to or greater than specified in Table 051-1, 124-1 are guarded by location. Parts are guarded by isolation when all entrances to enclosed spaces, runways, fixed ladders, and the like are kept locked, barricaded, or roped off and warning signs are posted at all entrances.

(b) Shields or enclosures. Guards less than four inches outside of the guard zone shall completely enclose the parts from contact up to the heights listed in Column 2 of Table 051-1. They shall not be closer to the live parts than listed in Column 4 of Table 051-1, except when suitable insulating material is used with circuits of less than 2500 V to ground. (See note under Table 051-1.) If more than four inches outside the guard zone, the guards shall extend a minimum of eight feet six inches

above the floor. Covers or guards, which must at any time be removed while the parts they guard are live, shall be arranged so that they cannot readily be brought into contact with live parts.

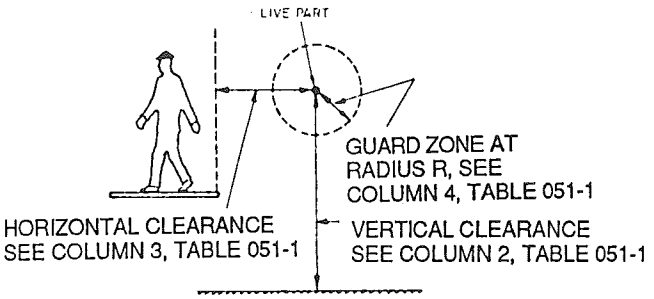


Fig. 051.1

Table 051–1. Minimum Clearance from Live Parts

PART A – Low, Medium and High Voltages

Nominal voltage between phases (1)	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
	Feet	Inches	Feet	Inches	Feet	Inches
151 to 600	8	8	3	4		2
2,400	8	9	3	4		3
7,200	8	10	3	4		4
13,800	9	0	3	6		6
23,000	9	3	3	9		9
34,500	9	6	4	0	1	0
46,000	9	10	4	4	1	4
69,000	10	5	4	11	1	11
115,000	11	7	6	1	3	1
138,000	12	2	6	8	3	8
161,000	12	10	7	4	4	4
230,000	14	10	9	4	6	4

PART B – Extra high voltages (based on switching surge factors)[2]

Maximum design voltage between phases (1)	Switching surge factor[3] per unit (A)[4]	Switching surge line to ground (B)[4]	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
		kV	Ft	In	Ft	In	Ft	In
362,000	2.2 or below	650	15	6	10	0	7	0
	2.3	680	16	0	10	6	7	6
	2.4	709	16	6	11	0	8	0
	2.5	739	17	2	11	8	8	8
	2.6	768	17	9	12	3	9	3
	2.7	798	18	4	12	10	9	10
	2.8	828	18	11	13	5	10	5
	2.9	857	19	7	14	1	11	1
	3.0	887	20	2	14	8	11	8

PART B – Extra high voltages (based on switching surge factors)[2]

Maximum design voltage between phases (1)	Switching surge factor[3] per unit (A)[4]	Switching surge line to ground (B)[4]	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
		kV	Ft	In	Ft	In	Ft	In
550,000	1.8 or below	808	18	10	13	4	10	4
	1.9	853	19	6	14	0	11	0
	2.0	898	20	6	15	0	12	0
	2.1	943	21	6	16	0	13	0
	2.2	988	22	6	17	0	14	0
	2.3	1033	23	7	18	1	15	1
	2.4	1078	24	8	19	2	16	2
	2.5	1123	25	10	20	4	17	4
	2.6	1167	27	0	21	6	18	6
	2.7	1212	28	4	22	10	19	10
800,000	1.5	980	22	4	16	10	13	10
	1.6	1045	23	11	18	5	15	5
	1.7	1110	25	6	20	0	17	1
	1.8	1176	27	3	21	9	18	9
	1.9	1241	29	0	23	6	20	6
	2.0	1306	30	10	25	4	22	4
	2.1	1372	32	9	27	3	24	3
	2.2	1437	34	8	29	3	26	2
	2.3	1502	36	9	31	3	28	3
	2.4	1567	38	9	33	3	30	3

PART C – Extra high voltages (based on BIL factors)[2]

Maximum design voltage between phases (1)	Basic impulse insulation[5] level (BIL) (C)[4]	Minimum vertical clearance of unguarded parts (2)[1]		Minimum horizontal clearance of unguarded parts (3)[1]		Minimum clearance guard to live parts (4)[1]	
	kV	Ft	In	Ft	In	Ft	In
362,000	1050	15	6	10	0	7	0
362,000	1300	17	2	11	8	8	8
550,000	1550	18	10	13	4	10	4
550,000	1800	20	6	15	0	12	0
800,000	2050	22	5	16	11	13	11

Notes and explanations to terms used in Table 051.1:

[1] Interpolate for intermediate values. The clearances in Column 4 of this table are solely for guidance in installing guards without definite engineering design and are not to be considered as a requirement for such engineering design. For example, the minimum clearances in the tables above are not intended to refer to the clearances between live parts and the walls of the cells, compartments or similar enclosing structures. They do not apply to the clearances between bus bars and supporting structures nor to clearances between the blade of a disconnecting switch and its base. However, where surge protective devices are applied to protect the live parts, the vertical clearances, Column 2 of Table 124–1 Part A may be reduced provided the clearance is not less than eight feet and six inches plus the electrical clearance between energized parts and ground as limited by the surge protective devices.

[2] Minimum clearances shall satisfy either switching surge or BIL duty requirements, whichever are greater.

[3] Switching surge factor – an expression of the maximum switching surge crest voltage in terms of the maximum operating line to neutral crest voltage of the power system.

[4] The values of Columns A, B, and C are power system design factors that shall correlate with selected minimum clearances.

Adequate data to support these design factors should be available.

5 The selection of station BIL shall be coordinated with surge protective devices when using BIL to determine minimum clearance. BIL–basic impulse insulation level–for definition and application see ANSI C92.1–1982 [17].

(c) Railings. Railings are not substitutes for complete guards. If the vertical distance in Table 051–1 cannot be obtained, railings may be used. Railings, if used, shall be located at a horizontal distance of at least three feet and preferably not more than four feet from the nearest point of the guard zone which is less than eight feet, six inches above the floor (see Fig. 051–2).

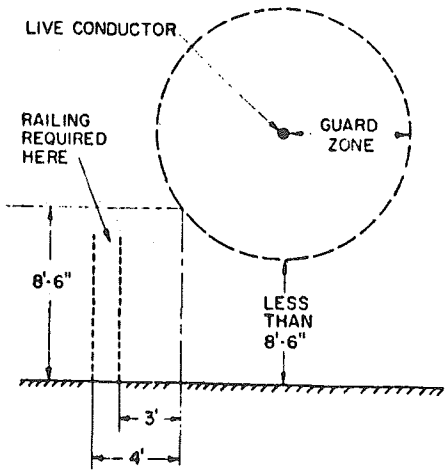


Fig. 051-2

Railing used as Guards

(d) Mats. Mats of rubber or other suitable insulating material complying with ASTM D178–81 [35] may be used at switchboards, switches, or rotating machinery as supplementary protection.

(e) Live parts below supporting surfaces for persons. The supporting surfaces for persons above live parts shall be without openings. Toe boards at least six inches high and handrails shall be provided at all edges.

(f) Insulating covering on conductors or parts. Conductors and parts may be considered as guarded by insulation if they have either of the following:

(i) Insulation covering of a type and thickness suitable for the voltage and conditions under which they are expected to be operated and if operating above 2500 V to ground having metallic insulation shielding or semiconducting shield in combination with suitable metallic drainage which is grounded to an effective ground.

Note: Nonshielded insulated conductors listed by a qualified testing laboratory shall be permitted for use up to 8000 V (phase–to–phase) when the conductors meet the requirements of ANSI/NFPA 70–1981 [31], Article 310–6.

(ii) Barriers or enclosures which are electrically and mechanically suitable for the conditions under which they are expected to be operated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–05125, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296–44–05129 Working space about electric equipment. (1) Working space (600 volts or less). Access and working space shall be provided and maintained about electric equipment to permit ready and safe operation and maintenance of such equipment.

(a) Clear spaces. Working space required by this section shall not be used for storage. When normally enclosed energized parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be guarded.

(b) Access and entrance to working space. At least one entrance shall be provided to give access to the working space about electrical equipment.

(c) Working space. The working space in the direction of access to energized parts operating at 600 volts or less which require examination, adjustment, servicing, or maintenance while energized shall not be less than indicated in Table 051–2. In addition to the dimensions shown in Table 051–2 the working space shall not be less than thirty inches wide in front of the electric equipment. Distances shall be measured from the energized parts if such are exposed or from the enclosure front or opening if such are enclosed. Concrete, brick, or tile walls shall be considered grounded.

Table 051–2 Working Space

Voltage to ground	Minimum Clear Distance		
	ft	ft	ft
Condition:	1	2	3
0–150	3	3	3
151–600	3	3 1/2	4

Where the *conditions* are as follows:

1. Exposed energized parts on one side and no energized or grounded parts on the other side of the working space, or exposed energized parts on both sides effectively guarded by suitable wood or other insulating materials. Insulated wire or insulated bus bars operating at not over 300 V shall not be considered energized parts.

2. Exposed energized parts on one side and grounded parts on the other side.

3. Exposed energized parts on both sides of the work space (not guarded as provided in Condition 1) with the operator between.

Note: Working space shall not be required in back of assemblies, such as dead–front switchboards or motor control centers where there are no renewable or adjustable parts such as fuses or switches on the back and where all connections are accessible from locations other than the back.

(d) Headroom working space. The minimum headroom of working spaces about switchboards or control centers shall be seven feet.

(e) Front working space. In all cases where there are energized parts normally exposed on the front of switchboards or motor control centers, the working space in front of such equipment shall not be less than three feet.

(2) Working space over 600 volts. Working space shall be in accordance with Table 051-1 clearances for guarding.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05129, filed 7/25/86.]

WAC 296-44-05131 Equipment for work on energized parts. When it is necessary for personnel to move themselves, material, or tools within the guard zone of unguarded energized parts, protective equipment shall be provided.

This protective equipment shall be periodically inspected, tested, and kept in a safe condition. Protective equipment shall be rated for not less than the voltage involved.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05131, filed 7/25/86.]

WAC 296-44-05135 Classified locations. Electrical installations in classified areas shall meet the requirements of ANSI/NFPA 70-1981 [31], Articles 500 through 503 and Articles 511 through 517.

Specific classified areas in a power plant or substation and their classifications are identified in the following subsections.

(1) Coal-handling locations.

(a) Unventilated tunnels below stockpiles or surge piles and spaces inside, above or below coal storage silos or bunkers or other enclosed coal storage spaces where methane or coal dust may accumulate, are Class I, Division 1, Group D, and Class II, Division 1, Group F locations.

(b) Enclosed areas of preparation plants or coal handling facilities where coal dust might accumulate, are Class II, Division 1, Group F locations.

(c) Electrical equipment in other locations in which hazardous concentrations of flammable gases or vapors may exist continually, intermittently or periodically under normal operating conditions shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501 or be adequately ventilated.

(d) The minimum acceptable requirements for adequate ventilation (pressurization) to reduce the classification of an enclosed area or enclosure within a Class I, Division 1 area to nonclassified are:

(i) The ventilation system shall maintain at least 0.1 inch of positive water pressure in the area with all openings closed.

(ii) The ventilation system shall provide a minimum velocity of 60 feet per minute outward through each opening with all openings open at the same time.

(iii) The ventilation system shall be interlocked so that on failure of the ventilation system, all power to the area shall be de-energized except to those devices which meet the Class I, Division 1 requirements without the ventilation system.

(iv) The maximum operating temperature of any internal surface shall not exceed eighty percent of the ignition temperature of the hazardous material involved.

(e) Locations in which combustible dust is or may be in suspension in the air continuously, intermittently, or periodically under normal operating conditions, or in quantities sufficient to produce explosions or ignitable mixtures, are classified as Class II, Division 1, Group F locations and all electrical equipment shall be installed and maintained in accordance with the requirements of ANSI/NFPA 70-1981 [31], Article 502.

(f) Locations where dangerous concentrations of suspended dust are prevented during normal operation but where dust accumulations on electrical equipment may be sufficient to interfere with the safe dissipation of heat from electrical equipment or might be ignited by arcs, sparks, or burning material from such equipment are Class II, Division 2, Group F locations and all electrical equipment shall be installed and maintained in accordance with the requirements of ANSI/NFPA 70-1981 [31], Article 502.

(g) Enclosed sections where only wet coal is handled or enclosed sections so cut off as to be free from dangerous amounts of coal dust are not classified. Coal shall be considered to be wet if enough water sprays are installed and maintained to prevent more than 0.3 ounce of coal dust per cubic foot of enclosed air volume from being thrown into suspension or from accumulating on or in electrical equipment.

(h) Locations having completely dust-tight pulverized fuel systems designed and installed in compliance with ANSI/NFPA 85F-1982 [33], shall not be considered classified.

(i) Portable lamps for use in fuel bunkers or bins shall be suitable for Class II, Division 1 locations.

(j) Sparking electrical tools shall not be used where flammable dust or dust clouds are present.

(k) An equipment grounding conductor shall be carried with the power conductors and serve to ground the frames of all equipment supplied from that circuit. The origin of the grounding conductor shall be:

(i) Ungrounded delta or wye—Transformer frame ground.

(ii) Grounded delta or wye—Transformer grounded secondary connection.

(iii) Resistance grounded wye—The grounded side of the grounding resistor.

(l) Ungrounded systems should be equipped with a ground fault indicating device to give both a visual and audible alarm upon the occurrence of a ground fault in the system.

(2) Flammable and combustible liquids.

(a) Flammable liquid shall mean a liquid having a flash point below 100°F and having a vapor pressure not exceeding forty pounds per square inch (absolute) at 100°F and shall be known as a Class I liquid.

(b) Combustible liquid shall mean a liquid having a flash point greater than or equal to 100°F and having a vapor pressure not exceeding forty pounds per square inch (absolute) at 100°F.

(c) Class I liquids are subdivided as follows:

(i) Class IA includes those having flash points below 73°F and having a boiling point below 100°F.

(ii) Class IB includes those having flash points below 73°F.

(iii) Class IC includes those having flash points at or above 73°F and below 100°F.

(d) Combustible liquids are subdivided as follows:

(i) Class II includes those having flash points equal to or greater than 100°F but less than 140°F.

(ii) Class IIIA includes those having flash points equal to or greater than 140°F but less than 200°F.

(iii) Class IIIB includes those having flash points greater than or equal to 200°F.

(3) Flammable liquid storage area. Electrical wiring and equipment located in inside storage rooms used for Class I liquids shall be approved for Class I, Division 2 locations, (see Table 051-3).

Table 051-3 Electrical Equipment Classified Areas-- Flammable Liquid Storage Areas

Location	NEC Class I Division	Extent of Classified Area
Indoor equipment installed where flammable vapor-air mixtures may exist under normal operations.	1	Area within 5 ft of any edge of such equipment, extending in all directions.
	2	Area between 5 ft and 8 ft of any edge of such equipment, extending in all directions. Also, area up to 3 ft above floor or grade level within 5 ft to 25 ft horizontally from any edge of such equipment.*
Outdoor equipment installed where flammable vapor-air mixtures may exist under normal operations.	1	Area within 3 ft of any edge of such equipment extending in all directions.
	2	Area between 3 ft and 8 ft of any edge of such equipment extending in all directions. Also, area up to 3 ft above floor or grade level within 3 ft to 10 ft horizontally from any edge of such equipment.
Tank - Above ground		
Shell, ends, or roof and dike area	2	Within 10 ft from shell, ends or roof of tank. Area inside dikes to level of top of dike.
Vent	1	Within 5 ft of open end of vent, extending in all directions.
	2	Area between 5 ft and 10 ft from open end of vent, extending in all directions.
Floating roof	1	Area above the roof and within the shell.
Tank - Underground		
fill opening	1	Any pit, box or space below grade level, any part of which is within the Division 1 or 2 classified area.
	2	Up to 18 in above grade level within a horizontal radius of 10 ft from a loose fill connection and within a horizontal radius of 5 ft from a tight fill connection.
Vent - Discharging upward	1	Within 3 ft of open end of vent, extending in all directions.
	2	Area between 3 ft and 5 ft of open end of vent, extending in all directions.
Drum and container filling; outdoors, or indoors with adequate ventilation	1	Within 3 ft of vent and fill opening, extending in all directions.
	2	Area between 3 ft and 5 ft from vent or fill opening, extending in all directions. Also up to 18 in above floor or grade level within a horizontal radius of 10 ft from vent or fill opening.
Pumps, bleeders, withdrawal fitting, meters and similar devices		
Indoors	2	Within 5 ft of any edge of such devices, extending in all directions. Also, up to 3 ft above floor or grade level within 25 ft horizontally from any edge of such devices.
Outdoors	2	Within 3 ft of any edge of such devices, extending in all directions. Also up to 18 in above grade level within 10 ft horizontally from any edge of such devices.
Pits		
Without mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
With mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings or piping, and not within a Division 1 or 2 classified area	2	Entire pit
Drainage ditches, separators, impounding basins	2	Area up to 18 in above ditch, separator or basin. Also up to 18 in above grade within 15 ft horizontally from any edge.

*Note: The release of Class I liquids may generate vapors to the extent that the entire building, and possibly a zone surrounding it, should be considered a Class I, Division 2 location.

*Note: The release of Class I liquids may generate vapors to the extent that the entire building, and possibly a zone surrounding it, should be considered a Class I, Division 2 location.

Table 051-4 Electrical Equipment Classified Areas-Bulk Plants

Location	NEC Class I, Group D Division	Extent of Classified Area
Bottom loading with vapor recovery or any bottom unloading	2	Within 3 ft of point of connections, extending in all directions. Also up to 18 in above grade within a horizontal radius of 10 ft from point of connection.

(4) Loading and unloading facilities. Electrical equipment located in the area shall comply with the requirements of Table 051-4.

(a) Static protection. Bonding facilities for protection against static sparks during the loading of tank vehicles through open domes shall be provided (i) where Class I liquids are loaded, or (ii) where Class II or Class III liquids are loaded into vehicles which may contain vapors from previous cargoes of Class I liquids.

(A) Protection as required in (a) of this subsection shall consist of a metallic bond wire permanently electrically connected to the fill stem or to some part of the rack structure in electrical contact with the fill stem. The free end of such wire shall be provided with a clamp or equivalent device for convenient attachment to some metallic part in electrical contact with the cargo tank of the tank vehicle.

(B) Such bonding connection shall be made fast to the vehicle or tank before dome covers are raised and shall remain in place until filling is completed and all dome covers have been closed and secured.

Note: Bonding as specified in (a)(A) and (B) of this subsection is not required:

(aa) Where vehicles are loaded exclusively with products not having a static accumulating tendency, such as asphalts including cutback asphalts, most crude oils, residual oils and water soluble liquids;

(bb) Where no Class I liquids are handled at the loading facility and the tank vehicles loaded are used exclusively for Class II and Class III liquids; and

(cc) Where vehicles are loaded or unloaded through closed bottom or top connections whether the hose or pipe is conductive or nonconductive.

(b) Stray currents. Tank car loading facilities where flammable and combustible liquids are loaded or unloaded through open domes shall be protected against stray currents by permanently bonding the pipe to at least one rail and to the rack structure, if of metal. Multiple pipes entering the rack area shall be permanently electrically bonded together. In addition, in areas where excessive stray currents are known to exist, all pipe entering the rack area shall be provided with insulating sections to electrically isolate the rack piping from the pipe lines. These precautions are not necessary where Class II or Class III liquids are handled exclusively and there is no probability that tank cars will contain vapors from previous cargoes of Class I liquids. Temporary bonding is not required between the tank car and the rack or piping during either loading or unloading irrespective of the class of liquid handled.

(c) Container filling facilities. Class I liquids shall not be dispensed into metal containers unless the nozzle or fill pipe is in electrical contact with the container. This can be accomplished by maintaining metallic contact during filling, by a bond wire between them, or by other conductive path having an electrical resistance not greater than 10^6 ohms. Bonding is not required where a container is filled through a closed system, or is made of glass or other nonconducting material.

Note: For additional information see ANSI/NFPA 77-1977 [32].

(5) Gasoline dispensing stations.

(a) WAC 296-44-05135(5) shall apply to areas where Class I liquids are stored, handled or dispensed. For areas where Class II or Class III liquids are stored, handled or dispensed, the electrical equipment may be installed in accordance with the provisions of applicable sections of this code (ANSI C2).

(b) All electrical equipment and wiring shall be furnished and installed in accordance with ANSI/NFPA 70-1981 [31]. All electrical equipment integral with the dispensing hose or nozzle shall be suitable for use in Division 1 locations.

(c) Table 051-5 shall be used to delineate and classify areas for the purpose of installation of electrical equipment under normal circumstances. A classified area shall not extend beyond an unpierced wall, roof, or other solid partition. For a definition of the class and division designations see ANSI/NFPA 70-1981 [31], Article 500.

(d) The area classifications listed in Table 051-5 are based on the premise that the installation meets the applicable requirements of this code in all respects. Should this not be the case, the local governing authority having jurisdiction (i.e., local, state or federal authorities) shall have the authority to determine the extent of the classified area.

Table 051-5 Electrical Equipment Classified Areas-Gasoline Dispensing Stations

Location	NEC Class I Division	Extent of Classified Area
Gasoline dispensing units (except overhead type dispensers)	1	The area up to 4 ft vertically above the base within the enclosure or up to a solid partition less than 4 ft above the base, located above the nozzle insertion level and above the level of any gasketed joint, hose, or stuffing box.
	2	Within 18 in horizontally in all directions from the Division 1 area within the enclosure.
Outdoor	2	Up to 18 in above grade level within 20 ft horizontally of any edge of enclosure.

Location	NEC Class I Division	Extent of Classified Area
Indoor		
With mechanical ventilation	2	Up to 18 in above grade or floor level within 20 ft horizontally of any edge of enclosure.
With gravity ventilation	2	Up to 18 in above grade or floor level within 25 ft horizontally of any edge of enclosure.
Gasoline dispensing units		Within the dispenser enclosure and 18 in in all directions from the enclosure where not suitably cut off by ceiling or wall. All electrical equipment integral with the dispensing hose or nozzle.
Overhead type		
Gasoline dispensing units	2	An area extending 2 ft horizontally in all directions beyond the Division 1 area and extending to grade below the classified area.
Overhead type *(Continued)*		
	2	Up to 18 in above grade level with 20 ft horizontally measured from a point vertically below the edge of any dispenser.
Gasoline dispensing station lubrication or service room	1	Any pit within any unventilated area.
with dispensing	2	Any pit with ventilation
	2	Area up to 18 in above floor or grade level and 3 ft horizontally from a lubrication pit.
Dispenser for Class I liquids	2	Within 3 ft of any fill or dispensing point, extending in all directions.
Without dispensing	2	Entire area within any pit used for lubrication or similar services where Class I liquids may be released.
	2	Area up to 18 in above any such pit, and extending a distance of 3 ft horizontally from any edge of the pit.
Storage and rest rooms	Non-classified	If there is any opening to these rooms within the extent of a Division 1 area, the entire room shall be classified as Division 1.

Location	NEC Class I, Group D Division	Extent of Classified Area
Vapor processing pits	1	Any pit, box, or space below grade level, any part of which is within a Division 1 or 2 location or which houses any equipment used to transport or process vapors.
Equipment	2	Within protective enclosures. The space within 18 in in all directions of equipment containing flammable vapor or liquid extending to grade level. Up to 18 in above grade level within 10 ft horizontally of the vapor processing equipment.

(6) Boilers.

(a) When storing, handling, or burning fuel oils which may have flash points below 100°F (Class I liquids, as defined in ANSI/NFPA 30–1981 [30]) or which may be heated above their flash point, attention must be given to electrical installations in areas where flammable vapors or gases may be present in the atmosphere. Typical locations are: Burner areas, fuel–handling equipment areas, fuel storage areas, pits, sumps, and low spots where fuel leakage or vapors may accumulate. ANSI/NFPA 70–1981 [31], Article 500 provides for classifying such areas and defines requirements for electrical installations in the areas so classified. The burner front piping and equipment shall be designed and constructed to eliminate hazardous concentrations of flammable gases that exist continuously, intermittently, or periodically under normal operating conditions. Providing the burners are thoroughly purged before removal for cleaning, burner front maintenance operations will not cause hazardous concentrations of flammable vapors to exist frequently. With such provisions, the burner front is not normally classified more restrictively, than Class I, Division 2.

(b) The operating company shall be responsible for classifying areas where fuel is stored, handled, or burned, and for revising the classification if conditions are changed. Installations shall conform to ANSI/NFPA 30–1981 [30] and ANSI/NFPA 70–1981 [31].

Note: For additional guidance see API RP 500 [34].

(7) Gaseous hydrogen systems for supply equipment.

(a) Outdoor storage areas shall not be located beneath electric power lines.

(b) Safety considerations at specific storage areas. Electrical equipment shall be suitable for Class I, Division 2 locations:

(i) Within fifteen feet of outdoor storage spaces;

(ii) Within adequately ventilated separate buildings or special rooms for storing hydrogen;

(iii) Within twenty–five feet of a hydrogen storage space in an adequately ventilated building used for other purposes.

(c) Space around elements of the generator hydrogen seal oil system shall not be considered classified for electrical installation except where external venting is not provided in the bearing drain system.

(d) Spaces around the hydrogen piping system beyond the point where the hydrogen storage system connects to

distribution piping shall not be considered classified for electrical installations, outside the boundaries established in WAC 296-44-05115 (7)(b)(a) and (c).

(8) Liquid hydrogen systems.

(a) Electrical wiring and equipment located within three feet of a point where connections are regularly made and disconnected, shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501, Class I, Group B, Division 1 locations.

(b) Except as provided in (a) of this subsection electrical wiring and equipment located within twenty-five feet of a point where connections are regularly made and disconnected or within twenty-five feet of a liquid hydrogen storage container, shall be in accordance with ANSI/NFPA 70-1981 [31], Article 501, Class I, Group B, Division 2 locations. When equipment approved for Class I, Group B atmospheres is not commercially available, the equipment may be (i) purged or ventilated in accordance with NFPA 496-1982 [42] or (ii) intrinsically safe, or (iii) approved for Class I, Group C atmospheres. This requirement does not apply to electrical equipment which is installed on mobile supply trucks or tank cars from which the storage container is filled.

(9) Sulfur. Electrical wiring and equipment located in areas where sulfur dust is in suspension in explosive or ignitable mixtures during normal operations, shall be suitable for Class II, Division 1, Group G.

(10) Oxygen. Bulk oxygen installations are not defined as classified locations.

(11) Liquefied petroleum gas (LPG).

(a) LPG is heavier than air.

(b) Since LPG is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity.

(c) Fixed electrical equipment and wiring installed within classified areas specified in Table 051-6 shall meet the requirements of ANSI/NFPA 70-1981 [31], Article 500.

Table 051-6 Electrical Equipment Classified Areas-LPG Storage

Location	NEC Class I Group D	Extent of Classified Area
Storage containers other than DOT cylinders	2	Within 15 ft in all directions from connections, except connections otherwise covered in Table K-1.
Tank vehicle and tank car loading and unloading	1	Within 5 ft in all directions from connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft but within 15 ft in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator of the sphere and grade.
Gage vent openings other than those on DOT cylinders	1	Within 5 ft in all directions from point of discharge.
	2	Beyond 5 ft but within 15 ft in all directions from point of discharge.
Relief valve	1	Within direct path of discharge.
Discharge other than those on DOT cylinders		Note: Fixed electrical equipment should preferably not be installed.
	1	Within 5 ft in all directions from point of discharge.
	2	Beyond 5 ft but within 15 ft in all directions from point of discharge except within the path of discharge.
Pits or trenches containing or located beneath LP-Gas valves, regulators, and similar equipment:		
Without mechanical ventilation	1	Entire pit or trench.
	2	Entire room and any adjacent room not separated by a gastight partition.
	2	Within 15 ft in all directions from pit or trench when located outdoors.
With adequate mechanical ventilation	2	Entire pit or trench.
	2	Entire room and any adjacent room not separated by a gastight partition.
	2	Within 15 ft in all directions from pit or trench when located outdoors.
Special buildings or rooms for storage of portable containers	2	Entire room.
Pipelines and connections containing operational bleeds, drips, vents or drains	1	Within 5 ft in all directions from point of discharge.
Container filling:		
Indoors without ventilation	1	Entire room.
Indoors with adequate ventilation	1	Within 5 ft in all directions and connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft and entire room.
Outdoors in open air	1	Within 5 ft in all directions and connections regularly made or disconnected for product transfer.
	2	Beyond 5 ft but within 15 ft in all directions from a point where connections are regularly made or disconnected and within the cylindrical volume between the horizontal equator or the sphere and grade.

Table 051-7 Electrical Equipment Classified Areas-Natural Gas (Methane) Areas

Location	NEC Class I Group D	Extent of Classified Area
Nonfired areas containing gas pipeline connections, valves or gages:		
Indoors with adequate ventilation	2	Entire room and any adjacent room not separated by a gastight partition and 15 ft beyond any wall or roof ventilation discharge vent or louver.
Outdoors in open air at or above grade	2	Within 15 ft in all directions of connections, valves, or gages.
Pits, trenches or sumps located in or adjacent to Division 1 or 2 areas	1	Entire pit, trench or sump.

(12) Natural gas (methane).

(a) Natural gas is lighter than air.

(b) Since natural gas is contained in a closed system of piping and equipment, the system need not be electrically conductive or electrically bonded for protection against static electricity.

(c) Fixed electrical equipment and wiring installed within classified areas specified in Table 127-5 shall meet the requirements of ANSI/NFPA 70-1981 [31], Article 500.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05135, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-05141 Identification. Electrical equipment and devices shall be identified for safe use and operation. The identification shall be as nearly uniform as practical throughout any one station. Identification marks shall not be placed on removable covers or doors where the interchanging of those covers or doors is possible.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-05141, filed 7/25/86.]

WAC 296-44-065 Rotating equipment. Rotating equipment includes generators, motors, motor generators and rotary converters.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-065, filed 7/25/86.]

WAC 296-44-06505 Speed control and stopping devices. (1) Automatic overspeed trip device for prime movers. When harmful overspeed can occur, prime movers driving generating equipment shall be provided with automatic overspeed trip devices in addition to their governors.

(2) Manual stopping devices. Stopping devices, such as switches or valves which can be operated from locations convenient to machine operators, shall be provided for all prime movers and for motors driving generating equipment.

Manual controls to be used in emergency for machinery and electrical equipment shall be located so as to provide protection to the operator during such emergency.

(3) Speed limit for motors. Machines of the following types shall be provided with speed-limiting devices unless their inherent characteristics or the load and the mechanical connection thereto are such as to safely limit the speed.

(a) Separately excited direct-current motors.

(b) Series motors.

(4) Low-voltage protection of motors. All motors so employed or arranged that an unexpected starting of the motor is a personnel hazard shall be equipped with low-voltage protection. This shall automatically cause and maintain the interruption of the motor circuit when the voltage falls below an operating value. This rule does not apply to those motors with an emergency use and where the opening of the circuit may cause less safe conditions.

(5) Adjustable-speed motors. Adjustable-speed motors, controlled by means of field regulation, shall, in addition to the provisions of WAC 296-44-06505(3), be so equipped and connected that the field cannot be weakened sufficiently to permit dangerous speed.

(6) Protection of control circuits. Where speed-limiting or stopping devices and systems are electrically operated, the control circuits by which such devices are actuated shall be protected from mechanical damage. Such devices and systems should be of the automatic tripping type.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06505, filed 7/25/86.]

WAC 296-44-06511 Motor control. If the starting is automatic, as for example, by a float switch, or if the starting device or control switch is not in sight, or more than fifty feet distant from the motor and all parts of the machinery operated, the power or control circuit shall be such that it can positively be kept open as by use of lockout/tagout procedures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06511, filed 7/25/86.]

WAC 296-44-06517 Mobile hydrogen equipment. Mobile hydrogen supply units being used to replenish a hydrogen system shall be bonded both to the grounding system and to the grounded parts of the hydrogen system.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-06517, filed 7/25/86.]

WAC 296-44-074 Storage batteries.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-074, filed 7/25/86.]

WAC 296-44-07405 General. The provisions of this section are intended to apply to all stationary installations of storage batteries.

Space shall be provided around batteries for safe inspection, maintenance, testing, and cell replacement and space left above the cells to allow for operation of lifting equipment when required, addition of water, and taking measurements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07405, filed 7/25/86.]

WAC 296-44-07411 Location. Storage batteries shall be located within a protective enclosure or area accessible only to qualified persons. A protective enclosure can be a battery room, control building, or a case, cage, or fence which will protect the contained equipment and minimize the possibility of inadvertent contact with energized parts.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07411, filed 7/25/86.]

WAC 296-44-07417 Ventilation. The battery area shall be ventilated, either by a natural or powered ventilation system to prevent accumulation of hydrogen. The ventilation system shall limit hydrogen accumulation to less than an explosive mixture. Failure of continuously operated or automatically controlled powered ventilation system shall be annunciated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07417, filed 7/25/86.]

WAC 296-44-07423 Racks. Racks refer to frames designed to support cells or trays. Racks shall be firmly anchored preferably to the floor. Racks should not be anchored to both the walls and the floor, thus allowing movement in the event of an earthquake. Racks made of metal shall be grounded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07423, filed 7/25/86.]

WAC 296-44-07427 Floors in battery areas. Floors of battery areas should be an acid-resistive material, or be painted with acid-resistive paint, or otherwise protected. Provision should be made to contain spilled electrolyte.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07427, filed 7/25/86.]

WAC 296-44-07433 Illumination for battery areas. Lighting fixtures shall be protected from physical damage by guards or isolation. Receptacles and lighting switches should be located outside of battery areas.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07433, filed 7/25/86.]

WAC 296-44-07439 Service facilities. (1) Proper eye protection and clothing shall be provided in the battery area during battery maintenance and installation and shall consist of:

(a) Goggles or goggles and face shield;

(b) Acid resistant gloves;

(c) Protective aprons and overshoes;

(d) Portable or stationary eye washing facilities for rinsing eyes and skin in accordance with chapter 296-62 WAC.

(2) Warning signs inside and outside of a battery room or in the vicinity of a battery area, prohibiting smoking, sparks or flame shall be provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-07439, filed 7/25/86.]

PART D--INSTALLATION AND MAINTENANCE OF ELECTRIC SUPPLY STATIONS AND EQUIPMENT

WAC 296-44-086 Transformers and regulators.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-086, filed 7/25/86.]

WAC 296-44-08605 Current-transformer secondary circuits protection when exceeding 600 volts. Secondary circuits, when in a primary voltage area exceeding 600 V should, except for short lead lengths at the terminals of the transformer, have the secondary wiring adequately protected by means of grounded conduit or by a grounded metallic covering. Current transformers shall have provision for shorting the secondary winding.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08605, filed 7/25/86.]

WAC 296-44-08611 Grounding secondary circuits of instrument transformers. The secondary circuits of instrument transformers shall be effectively grounded where functional requirements permit.

Note: This will sometimes require marking to distinguish such a circuit from others with which it is associated, but which are protected by ground connections.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08611, filed 7/25/86.]

WAC 296-44-08619 Location and arrangement of power transformers and regulators. (1) Outdoor installations.

(a) A transformer or regulator shall be installed so that all energized parts are enclosed or guarded so as to minimize the possibility of inadvertent contact, or the energized parts shall be isolated in accordance with WAC 296-44-05125. The case shall be grounded in accordance with WAC 296-44-05119.

(b) Oil-filled transformers shall be protected by one or more of the following methods to minimize fire hazards. The method to be applied shall be according to the degree of fire hazard and the amount of oil contained in the transformer. Recognized methods are space separation, fire-resistant barriers, automatic extinguishing systems, absorption beds and enclosures.

The amount of oil contained should be considered in the selection of space separation, fire-resistant barriers, automatic extinguishing systems, absorption beds, and enclosures which confine the oil of a ruptured transformer tank all of which are recognized safeguards.

(2) Indoor installations.

(a) Transformers and regulators 75 kVA and above containing flammable liquid and located indoors shall be installed in ventilated rooms or vaults separated from the balance of the building by fire walls. Doorways to the interior of the building shall be equipped with fire doors and shall have means of containing the oil.

(b) Transformers or regulators of the dry type or containing a nonflammable liquid or gas may be installed in a building without a fireproof enclosure. When installed in a building which is used for other than station purposes the case or the enclosure shall be designed so that all energized parts are enclosed in the case grounded in accordance with WAC 296-44-05119. As an alternate, the entire unit may be enclosed so as to minimize the possibility of inadvertent contact by persons with any part of the case or wiring. When installed, the pressure relief vent of a unit containing a nonbiodegradable liquid shall be furnished with a means for absorbing toxic gases.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-08619, filed 7/25/86.]

WAC 296-44-098 Conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-098, filed 7/25/86.]

WAC 296-44-09805 Electrical protection. Conductors shall be suitable for the location, use and voltage.

(1) Overcurrent protection required. Conductors and insulation shall be protected against excessive heating by the design of the system and by overcurrent, alarm, indication, or trip devices.

(2) Grounded conductors. Conductors normally grounded for the protection of persons shall be arranged without overcurrent protection or other means which could interrupt their continuity to ground.

(3) Circuits exposed to higher voltages. If exposed through transformer windings or outdoor circuits to higher voltages, circuits of less than 750 volts shall be isolated or grounded unless in suitable cable with grounded metal sheath, placed in grounded conduit or other suitable duct, or identified and guarded as required for conductors of the highest voltage to which they are exposed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09805, filed 7/25/86.]

WAC 296-44-09811 Mechanical protection. All conductors shall be adequately supported to withstand forces caused by the maximum short circuit current to which they may be subjected.

Where exposed to mechanical damage, casing, armor, or other means shall be employed to prevent damage or disturbance to conductors, their insulation, or supports.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09811, filed 7/25/86.]

WAC 296-44-09819 Isolation. All nonshielded insulated conductors of more than 2500 volts to ground and bare conductors of more than 150 V to ground, shall be isolated by elevation or guarded in accordance with WAC 296-44-05125.

Nonshielded, insulated, and jacketed conductors may be installed in accordance with WAC 296-44-05125 (3)(f).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09819, filed 7/25/86.]

WAC 296-44-09826 Conductor terminations. (1) Insulation. Ends and joints of insulated conductors, unless otherwise adequately guarded, shall have insulating covering equivalent to that of other portions of the conductor.

(2) Metal-sheathed or shielded cable. Insulation of the conductors where leaving the metal sheath or shield, shall be protected from mechanical damage, moisture and excessive electrical stress.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-09826, filed 7/25/86.]

WAC 296-44-110 Circuit breakers, reclosers, switches and fuses.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-110, filed 7/25/86.]

WAC 296-44-11005 Arrangement. Circuit breakers, reclosers, switches and fuses shall be so installed as to be accessible only to persons qualified for operation and maintenance. Walls, barriers, latched doors, location, isolation or other means shall be provided to protect persons from energized parts or arcing. Conspicuous marking shall be provided at the device and at any remote operating points to identify the equipment controlled. When the contact parts of a switching device are not normally visible, the device shall be equipped with an indicator to show all normal operating positions.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11005, filed 7/25/86.]

WAC 296-44-11021 Application. Circuit breakers, reclosers, switches, and fuses should be utilized with due regard to their assigned ratings of voltage and continuous and momentary currents. Circuit breakers, reclosers and fuses which perform a fault current interrupting function shall be capable of safely interrupting the maximum short circuit current available from the system at the point of application. The interrupting capacity should be reviewed prior to each significant system change.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11021, filed 7/25/86.]

WAC 296-44-11029 Circuit breakers, reclosers and switches containing oil. Circuit interrupting devices containing flammable liquids shall be adequately segregated from other equipment and buildings to limit damage in the event of an explosion or fire. Segregation may be provided by spacing, by fire-resistant barrier walls, or by metal cubicles. Gas relief vents should be equipped with oil separating devices or piped to a safe location.

Means shall be provided to control oil which could be discharged from vents or by tank rupture. This may be accomplished by absorption beds, pits, drains, or by any combination of these. Buildings or rooms housing this equipment shall be of fire resistant construction.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11029, filed 7/25/86.]

WAC 296-44-11035 Switches and disconnecting devices. (1) Capacity. Switches shall be of suitable voltage and ampere rating for the circuit in which they are installed. Switches used to break load current shall be marked with the current which they are rated to interrupt. It is recommended that switches that are not rated to interrupt the full load of the circuit be interlocked with circuit breakers to minimize the possibility of the switches being opened under load.

(2) Provisions for disconnecting. Switches and disconnectors shall be so arranged that they can be locked in the open and closed positions, or plainly tagged where it is not possible to install locks. For devices that are operated remotely and automatically, the control circuit shall be provided with a positive disconnecting means near the apparatus to prevent accidental operation of the mechanism.

(3) Visible break switch. A visible break switch or disconnector shall be inserted in each ungrounded conductor between electric supply equipment or lines and sources of energy of more than 600 V, if the equipment or lines may have to be worked on without protective grounding while the sources may be energized.

Where metal clad switchgear equipment is used, the withdrawn position of the circuit breaker, where clearly indicated, constitutes a visible break for this purpose.

(4) Accidental closing. Switches shall be so installed as to minimize the danger of accidental operation, and where practicable so that gravity cannot close them; such switches as may tend to close by gravity shall be provided with a proper latch or stop block to prevent accidental closing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11035, filed 7/25/86.]

WAC 296-44-11041 Disconnection of fuses. Fuses in circuits of more than 150 V to ground or more than 60 A shall be classified as disconnecting fuses or be arranged so that before handling:

(1) The fuses can be disconnected from all sources of electric energy; or

(2) The fuses can be conveniently removed by means of insulating handles.

Fuses can be used to disconnect from the source when they are so rated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-11041, filed 7/25/86.]

WAC 296-44-125 Switchgear and metal enclosed bus.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-125, filed 7/25/86.]

WAC 296-44-12505 Switchgear assemblies. (1) General requirements for all switchgear.

(a) To minimize movement, all switchgear shall be secured in a manner consistent with its conditions of service and applicable manufacturer's instructions.

(b) Cable routed to switchgear shall be supported to minimize forces applied to conductor terminals.

(c) Piping containing liquids, or corrosive or hazardous gases, shall not be routed in the vicinity of switchgear unless suitable barriers are installed to protect the switchgear from damage in the event of a pipe failure.

(d) Switchgear shall not be located where foreign flammable or corrosive gases or liquids are intentionally discharged. Companion equipment such as transformers and switchgear are not considered foreign.

(e) Switchgear should not be installed in a location which is still specifically under active construction, especially where welding and burning are required directly overhead. Special precautions should be observed to minimize impingement of slag, metal filings, moisture, dust, or hot particles.

Note: Switchgear may be installed in a general construction area provided suitable temporary protection is provided to minimize the risks associated with general construction activities.

(f) Precautions shall be taken to protect energized switchgear from damage when maintenance is performed in the area.

(g) Switchgear enclosure surfaces shall not be used as physical support for any item unless specifically designed for that purpose.

(h) Enclosure interiors shall not be used as storage areas unless specifically designed for the purpose.

(i) Metal instrument cases shall be grounded, enclosed in covers which are metal and grounded, or of insulating material.

(2) Metal enclosed power switchgear.

(a) Switchgear shall not be located within twenty-five feet horizontally indoors or ten feet outdoors of storage containers, vessels, utilization equipment or devices containing flammable liquids or gases.

Note: If an intervening barrier, designed to mitigate the potential effects of flammable liquids or gases, is installed, the distances listed above do not apply.

The restrictions are not intended to apply to the power transformer(s) supplying the switchgear.

(b) Enclosed switchgear rooms shall have at least two means of egress, one at each extreme of the area, not necessarily in opposite walls. Doors shall swing out and be equipped with panic bars, pressure plates or other devices that are normally latched but open under simple pressure.

Note: One door may be used when required by physical limitations if means are provided for unhampered exit during emergencies.

(c) Space shall be maintained in front of switchgear to allow breakers to be removed and turned without obstruction.

(d) Space shall be maintained in the rear of the switchgear to allow for door opening to at least 90° open, or a minimum of three feet and no inches without obstruction when removable panels are used.

(e) Permanently mounted devices, panelboards, etc., located on the walls shall not encroach on the space requirements in WAC 296-44-12515 (2)(d).

(f) Where columns extend into the room beyond the wall surface, the face of the column shall not encroach on the space requirements in WAC 296-44-12515 (2)(d).

(g) Low-voltage cables or conductors, except those to be connected to equipment within the compartment, shall not be routed through the medium-voltage or high-voltage divisions of switchgear unless installed in rigid metal conduit or isolated by rigid metal barriers.

(h) Low-voltage conductors routed from medium-voltage or high-voltage sections of switchgear shall terminate in a low-voltage section before being routed external to the switchgear.

(i) Conductors entering switchgear shall be insulated for the higher operating voltage in that compartment or be separated from insulated conductors of other voltage ratings.

(j) Switchgear enclosures shall be suitable for the environment in which they are installed.

(k) A warning sign shall be placed in each cubicle containing more than one high-voltage source.

(l) The location of control devices shall be readily accessible to personnel. Instruments, relays and other devices requiring reading or adjustments should be so placed that work can readily be performed from the working space.

(3) Dead front power switchboards. Dead front power switchboards with uninsulated rear connections shall be installed in rooms or spaces that are capable of being locked, with access limited to qualified personnel.

(4) Motor control centers.

(a) Motor control centers shall not be connected to systems having higher short circuit capability than the bus bracing can withstand. Where current limiting fuses are employed on the source side of the bus, the bus bracing and breaker interrupting rating are determined by the peak let-through characteristic of the current limiting fuse.

(b) A warning sign shall be placed in each cubicle containing more than one voltage source.

(5) Control switchboards.

(a) Cabinets containing solid-state logic devices, electron tubes, or relay logic devices such as boiler analog, burner safety, annunciators, computers, invertors, precipitator logic, soot blower control, load control, telemetering, totalizing microwave radio, etc., are covered under these rules.

(b) Where carpeting is installed in rooms containing control switchboards, it shall be antistatic type and shall minimize the release of noxious, corrosive, caustic, or toxic gas under any condition.

(c) Layout of the installation shall provide adequate clearance in front of, or rear of panels if applicable, to allow meters to be read without use of stools or auxiliary devices.

(d) Where personnel access to control panels such as bench boards is required, cables shall be routed through openings separate from the personnel opening. Removable, sliding, or hinged panels are to be installed to close the personnel opening when not in use.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-12505, filed 7/25/86.]

WAC 296-44-12515 Metal enclosed bus. (1) General requirements for all types of bus.

(a) Busways shall be installed only in accessible areas.

(b) Busways unless specifically approved for the purpose, shall not be installed: Where subject to severe physical damage or corrosive vapors; in hoistways; in any classified hazardous location; outdoors or in damp locations.

(c) Dead ends of busway shall be closed.

(d) Busways should be marked with the voltage and current rating for which they are designed, in such manner as to be visible after installation.

(2) Isolated-phase bus.

(a) The minimum clearance between an isolated-phase bus and any magnetic material shall be the distance recommended by the manufacturer to avoid overheating of the magnetic material.

(b) Nonmagnetic conduit should be used to protect the conductors for bus alarm devices, thermocouples, space heaters, etc., if routed within the manufacturer's recommended minimum distance to magnetic material and parallel to isolated-phase bus enclosures.

(c) When enclosure drains are provided for isolated-phase bus, necessary piping shall be provided to divert water away from electrical equipment.

(d) Wall plates for isolated-phase bus shall be nonmagnetic, such as aluminum or stainless steel.

(e) Grounding conductors for isolated-phase bus accessories should not be routed through ferrous conduit.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-12515, filed 7/25/86.]

WAC 296-44-134 Surge arresters.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-134, filed 7/25/86.]

WAC 296-44-13405 General requirements. If arresters are required, they shall be located as close as practical to the equipment they protect.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13405, filed 7/25/86.]

WAC 296-44-13415 Indoor locations. Arresters, if installed inside of buildings shall be enclosed or shall be located well away from passageways and combustible parts.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13415, filed 7/25/86.]

WAC 296-44-13421 Grounding conductors. Grounding conductors shall be run as directly as possible between the arresters and ground and be of low impedance and ample current-carrying capacity (see WAC 296-44-023 for methods of protective grounding).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13421, filed 7/25/86.]

WAC 296-44-13431 Installation. Arresters shall be installed in such a manner and location that neither the expulsion of gases nor the arrester disconnector is directed upon live parts in the vicinity.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-13431, filed 7/25/86.]

PART E--INSTALLATION, MAINTENANCE OF OVERHEAD SUPPLY AND COMMUNICATION LINES

WAC 296-44-170 Safety rules for the installation and maintenance of overhead electric supply and communication lines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-170, filed 7/25/86.]

WAC 296-44-17005 Purpose. The purpose of WAC 296-44-170 through 296-44-31792 is the practical safeguarding of persons during the installation, operation, or maintenance of overhead supply and communication lines and their associated equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17005, filed 7/25/86.]

WAC 296-44-17017 Scope. These sections cover supply and communication conductors and equipment in overhead lines. They cover the associated structural arrangements of such systems and the extension of such systems into buildings. The rules include requirements for spacing, clearances, and strength of construction. They do not cover installations in electric supply stations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17017, filed 7/25/86.]

WAC 296-44-17029 Application of rules. The general requirements for application of these rules are contained in WAC 296-44-016. However, when a structure is replaced, the arrangement of equipment shall conform to the current edition of WAC 296-44-21287(3).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-17029, filed 7/25/86.]

WAC 296-44-182 General requirements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-182, filed 7/25/86.]

WAC 296-44-18205 Referenced sections. The introduction WAC 296-44-005, 296-44-013, and 296-44-016, definitions WAC 296-44-011, references WAC 296-44-017, and grounding methods WAC 296-44-023 shall apply to the requirements of WAC 296-44-170 through 296-44-31792.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18205, filed 7/25/86.]

WAC 296-44-18225 Induced voltages. Rules covering supply line influence and communication line susceptiveness have not been detailed in this code. Cooperative procedures are recommended in the control of voltages induced from proximate facilities. Therefore, reasonable advance notice should be given to owners or operators of other proximate facilities which may be adversely affected by new construction or changes in existing facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18225, filed 7/25/86.]

WAC 296-44-18239 Accessibility. All parts which must be examined or adjusted during operation shall be arranged so as to be accessible to authorized persons by the provision of adequate climbing spaces, working spaces, working facilities, and clearances between conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18239, filed 7/25/86.]

WAC 296-44-18250 Inspection and tests of lines and equipment. (1) When in service.

(a) Initial compliance with rules. Lines and equipment shall comply with these safety rules when placed in service.

(b) Inspection. Lines and equipment shall be inspected at such intervals as experience has shown to be necessary.

(c) Tests. When considered necessary, lines and equipment shall be subjected to practical tests to determine required maintenance.

(d) Record of defects. Any defects affecting compliance with this code revealed by inspection or tests, if not promptly corrected, shall be recorded; such records shall be maintained until the defects are corrected.

(e) Remedying defects. Lines and equipment with recorded defects which could reasonably be expected to endanger life or property shall be promptly repaired, disconnected, or isolated.

(2) When out of service.

(a) Lines infrequently used. Lines and equipment infrequently used shall be inspected or tested as necessary before being placed into service.

(b) Lines temporarily out of service. Lines and equipment temporarily out of service shall be maintained in a safe condition.

(c) Lines permanently abandoned. Lines and equipment permanently abandoned shall be removed or maintained in a safe condition.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18250, filed 7/25/86.]

WAC 296-44-18261 Grounding of circuits, supporting structures, and equipment. (1) Methods. Grounding required by these rules shall be in accordance with the applicable methods given in WAC 296-44-023.

(2) Circuits.

(a) Common neutral. A conductor used as a common neutral for primary and secondary circuits shall be effectively grounded as specified in WAC 296-44-023.

(b) Other neutrals. Primary or secondary neutral conductors, other than common neutrals, which are to be effectively grounded, shall be grounded as specified in WAC 296-44-023.

(c) Surge arresters. Where the operation of surge arresters is dependent upon grounding, they shall be grounded in accordance with the methods outlined in WAC 296-44-023.

(d) Use of earth as part of circuit. Supply circuits shall not be designed to use the earth normally as the sole conductor for any part of the circuit.

(3) Noncurrent-carrying parts.

(a) General. Metal or metal reinforced supporting structures, including lamp posts; metal conduits and raceways; cable sheaths; messengers; metal frames, cases and hangers of equipment; and metal switch handles and operating rods shall be effectively grounded.

Note 1: This rule does not apply to frames, cases, and hangers of equipment and switch handles and operating rods which are eight feet or more above readily accessible surfaces or are otherwise isolated or guarded and where the practice of not grounding such items has been a uniform practice over a well defined area.

Note 2: This rule does not apply to isolated or guarded equipment cases in certain specialized applications, such as series capacitors where it is necessary that equipment cases be either ungrounded or connected to the circuit. Such equipment cases shall be considered as energized and shall be suitably identified.

Note 3: This rule does not apply to equipment cases, frames, equipment hangers, conduits, raceways, and cable sheaths enclosing only communications conductors, provided they are not exposed to probable contact with open supply conductors of over 300 volts.

(b) Guys. Guys shall be effectively grounded if attached to a supporting structure carrying any supply conductor of more than 300 volts or if exposed to such conductors.

Note 1: This rule does not apply to guys containing an insulator or insulators installed in accordance with and meeting the requirements of WAC 296-44-31738.

Note 2: This rule does not apply to guys attached to supporting structures if all supply conductors are in cable conforming to the requirements of WAC 296-44-21209 (3)(a), (b), and (c).

Note 3: This rule does not apply if the guy is attached to a supporting structure on private right-of-way if all the supply circuits exceeding 300 volts meet the requirements of WAC 296-44-19209 (2)(b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18261, filed 7/25/86.]

WAC 296-44-18273 Arrangement of switches. (1) Accessibility. Switches or their control mechanisms shall be installed so as to be accessible to authorized persons.

(2) Indicating open or closed position. Switch position shall be visible or clearly indicated.

(3) Locking. Switch operating mechanisms which are accessible to unauthorized persons shall have provisions for locking in each operational position.

(4) Uniform position. The handles or control mechanisms for all switches throughout any system should have consistent positions when opened and uniformly different positions when closed in order to minimize operating errors. Where this practice is not followed, the switches should be marked to minimize mistakes in operation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-18273, filed 7/25/86.]

WAC 296-44-194 Relations between various classes of lines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-194, filed 7/25/86.]

WAC 296-44-19405 Relative levels. (1) Standardization of levels. The levels at which different classes of conductors are to be located should be standardized by agreement of the utilities concerned.

(2) Relative levels: Supply and communication conductors.

(a) Preferred levels. Where supply and communication conductors cross each other or are located on the same structures, the supply conductors should be carried at the higher level.

Note: This rule does not apply to trolley feeders which may be located for convenience approximately at the level of the trolley-contact conductor.

(b) Special construction for supply circuits, the voltage of which is 600 volts or less and carrying power not in excess of 5 kilowatts. Where all circuits are owned or operated by one party or where cooperative consideration determines that the circumstances warrant and the necessary coordinating methods are employed, single-phase alternating-current or two-wire direct-current circuits carrying a voltage of 600 volts or less between conductors, with transmitted power not in excess of 5 kilowatts, when involved in the joint use of structures with communication circuits may be installed in accordance with Footnote 14 of Table 212-1 and Footnote 1 of Table 212-15, under the following conditions.

(i) That such supply circuits are of covered conductor not smaller than No. 8 AWG medium hard-drawn copper or its equivalent in strength, and the construction otherwise conforms with the requirements for supply circuits of the same class.

(ii) That the supply circuits be placed on the end and adjacent pins of the lowest through signal support arm and that a thirty inch climbing space be maintained from the ground up to a point at least twenty-four inches above the supply circuits. The supply circuits shall be rendered conspicuous by the use of insulators of different form or color from others on the poleline or by stenciling the voltage on each side of the support arm between the pins carrying each supply circuit, or by indicating the voltage by means of metal characters.

(iii) That there shall be a vertical clearance of at least two feet between the support arm carrying these supply circuits and the next support arm above. The other pins on the support arm carrying the supply circuits may be occupied by communication circuits used in the operation or control of signal system or other supply system if owned, operated, and maintained by the same company operating the supply circuits.

(iv) That such supply circuits shall be equipped with arresters and fuses installed in the supply end of the circuit and where the signal circuit is alternating current, the protection shall be installed on the secondary side of the supply transformer. The arresters shall be designed so as to break down at approximately twice the voltage between the wires of the circuit, but the breakdown voltage of the arrester need not be less than 1 kilovolt. The fuses shall have a rating not in excess of approximately twice the maximum operating current of the circuit, but their rating need not be less than 10 amperes. The fuses likewise shall in all cases have rating of at least 600 volts, and where the supply transformer is a stepdown transformer, shall be capable of opening the circuit successfully in the event the transformer primary voltage is impressed upon them.

(v) Such supply circuits in cable meeting the requirements of WAC 296-44-21209 (3)(a), (b), and (c) may be installed below communication attachments, with not less than two feet vertical separation between the supply cable and the lowest communication attachment. Communication circuits other than those used in connection with the operation of the supply circuits shall not be carried in the same cable with such supply circuits.

(vi) Where such supply conductors are carried below communication conductors, transformers and other apparatus associated therewith shall be attached only to the sides of the support arm in the space between, and at no higher level than, such supply wires.

(vii) Lateral runs of such supply circuits carried in a position below the communication space shall be protected through the climbing space by wood molding or equivalent covering, or shall be carried in insulated multiple-conductor cable, and such lateral runs shall be placed on the underside of the support arm.

(3) Relative levels: Supply lines of different voltage classifications (as classified in Table 212-15).

(a) At crossings or conflicts. Where supply conductors of different voltage classifications cross each other or structure conflict exists, the higher voltage lines should be carried at the higher level.

(b) On structures used only by supply conductors. Where supply conductors of different voltage classifications are on the same structures, relative levels should be as follows:

(i) Where all circuits are owned by one utility, the conductors of higher voltage should be placed above those of lower voltage.

(ii) Where different circuits are owned by separate utilities, the circuits of each utility may be grouped together and one group of circuits may be placed above the other group provided that the circuits in each group are located so that those of higher voltage are at the higher levels and that any of the following conditions are met:

(A) A vertical spacing of not less than that required by Table 212-15 is maintained between the nearest line conductors of the respective utilities.

(B) Conductors of a lower voltage classification placed at a higher level than those of a higher classification shall be placed on the opposite side of the structure.

(C) Ownership and voltage are prominently displayed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19405, filed 7/25/86.]

WAC 296-44-19421 Avoidance of conflict. Two separate lines, either of which carries supply conductors, should be so separated from each other that neither conflicts with the other. If this is not practical, the conflicting line or lines should be separated as far as possible and shall be built to the grade of construction required by WAC 296-44-242 for a conflicting line, or the two lines shall be combined on the same structures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19421, filed 7/25/86.]

WAC 296-44-19433 Joint use of structures. Joint use of structures should be considered for circuits along the same general route. The choice between joint use of structures and separate lines shall be determined through cooperative consideration of all the factors involved, including the character of circuits, the total number and weight of conductors, tree conditions, number and location of branches and service drops, possible structure conflicts, availability of right-of-way, etc. Where such joint use is mutually agreed upon, it shall be subject to the appropriate grade of construction specified in WAC 296-44-242.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-19433, filed 7/25/86.]

WAC 296-44-212 Clearances.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-212, filed 7/25/86.]

WAC 296-44-21209 General. (1) Application. This section covers all clearances, including climbing spaces, involving overhead supply and communications lines. Clearances of equipment from structure surfaces, from spaces accessible to the general public, and height above ground are covered in WAC 296-44-31765.

(2) Measurement of clearance and spacing. Unless otherwise stated, all clearances shall be measured from surface to surface and all spacings shall be measured center to center. For clearance measurement, live metallic hardware electrically connected to line conductors shall be considered a part of the line conductors. Metallic bases of potheads, surge arresters, and similar devices shall be considered a part of the supporting structure.

(3) Supply cables. For clearance purposes, supply cables, including splices and taps, conforming to any of the following requirements are permitted lesser clearances than open conductors of the same voltage. Cables should be capable of withstanding tests applied in accordance with an applicable standard.

(a) Cables of any voltage having an effectively grounded continuous metal sheath or shield, or cables designed to operate on a multigrounded system at 8.7

kV or less, having a semiconducting insulation shield in combination with suitable metallic drainage, all supported on and cabled together with an effectively grounded bare messenger–neutral.

(b) Cables of any voltage, not included in (a) of this subsection covered with a continuous auxiliary semiconducting shield in combination with suitable metallic drainage and supported on and cabled together with an effectively grounded bare messenger.

(c) Insulated, nonshielded cable operated at not over 5 kV phase–to–phase, or 2.9 kV phase–to–ground, supported on and cabled together with an effectively grounded bare messenger.

(4) Covered conductors. Covered conductors shall be considered bare conductors for all clearance requirements except that spacing between conductors of the same or different circuits, including grounded conductors, may be reduced below the minimum requirements for open conductors when the conductors are owned, operated, or maintained by the same party and when the conductor covering provides sufficient dielectric strength to prevent a short circuit in case of momentary contact between conductors or between conductors and the grounded conductor. Intermediate spacers may be used to maintain conductor spacing and provide support.

(5) Neutral conductors.

(a) Neutral conductors which are effectively grounded throughout their length and associated with circuits of 0 to 22 kilovolts to ground may have the same clearances as guys and messengers, except as provided for conductors over railroads in WAC 296–44–21230(1), Table 212–1, Footnote 15.

(b) All other neutral conductors of supply circuits shall have the same clearances as the phase conductors of the circuit with which they are associated.

(6) Alternating and direct current circuits. The rules of this section are applicable to both alternating and direct current circuits. For direct current circuits, the clearance requirements shall be the same as those for alternating current circuits having the same crest voltage to ground.

(7) Constant–current circuits. The clearances for constant–current circuits shall be determined on the basis of their nominal full–load voltage.

(8) Maintenance of clearances and spacings. The clearances and spacing required shall be maintained at the values and under the conditions specified in WAC 296–44–212.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–21209, filed 7/25/86.]

WAC 296–44–21221 Clearances of supporting structures from other objects. Supporting structures, support arms and equipment attached thereto, and braces shall have the following clearances from other objects. The clearance shall be measured between the nearest parts of the objects concerned.

(1) From fire hydrants. Not less than three feet.

RECOMMENDATION: Where conditions permit, a clearance of not less than four feet is recommended.

(2) From streets, roads, and highways.

(a) Where there are curbs: Supporting structures, support arms, or equipment attached thereto, up to fifteen feet above the road surface shall be located a sufficient distance from the street side of the curbs to avoid contact by ordinary vehicles using and located on the traveled way. In no case shall such distance be less than six inches.

(b) Where there are no curbs, supporting structures should be located a sufficient distance from the roadway to avoid contact by ordinary vehicles using and located on the traveled way.

(c) Location of overhead utility installations on highways with narrow rights–of–way or on urban streets with closely abutting improvements are special cases which must be resolved in a manner consistent with the prevailing limitations and conditions.

(3) From railroad tracks. Where railroad tracks are paralleled or crossed by overhead lines, all portions of the supporting structures, support arms, anchor guys, and equipment attached thereto less than twenty–two feet above the nearest track rail shall be located not less than twelve feet from the nearest track rail. See WAC 296–44–21253(8).

Note 1: A clearance of not less than seven feet may be allowed where the supporting structure is not the controlling obstruction, provided sufficient space for a driveway is left where cars are loaded or unloaded.

Note 2: Supports for overhead trolley contact conductors may be located as near their own track rail as conditions require. If very close, however, permanent screens on cars will be necessary to protect passengers.

Note 3: Where necessary to provide safe operating conditions which require an uninterrupted view of signals, signs, etc. along tracks, the parties concerned shall cooperate in locating structures to provide the necessary clearance.

Note 4: At industrial sidings, a clearance of not less than seven feet shall be permitted, provided sufficient space is left where cars can be loaded or unloaded.

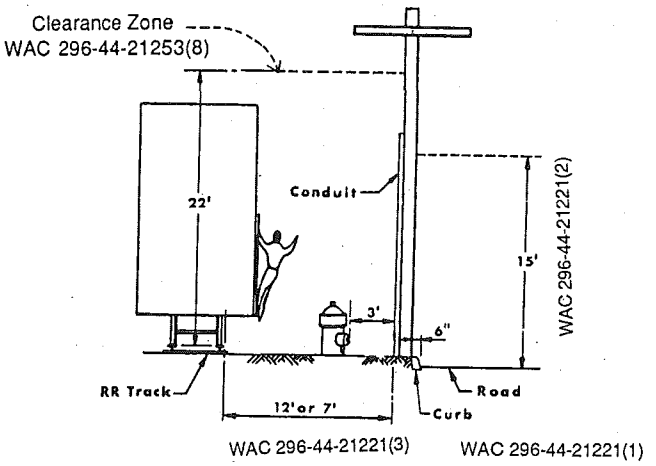


Fig. 212-1

Clearances to Other Objects

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21221, filed 7/25/86.]

WAC 296-44-21230 Vertical clearance of wires, conductors, cables, and live parts of equipment above ground, rails, or water. The vertical clearance of all wires, conductors, cables, and live parts of equipment above ground in generally accessible places, or above the top of the rails or water, shall not be less than the following:

(1) Basic clearances for wires, conductors, and cables. The clearances in Table 212-1 apply under the following conditions:

(a) Conductor temperature of 60°F, no wind, with final unloaded sag in the wire, conductors, or cables, or with initial unloaded sag in cases where these facilities are maintained approximately at initial unloaded sags.

(b) Span lengths not greater than the following:

Loading District	Span Lengths (feet)
Heavy	[1]175
Medium	[1]250
Light	350

[1] One hundred fifty feet in heavy-loading district and two hundred twenty-five feet in medium-loading district for three-stand conductors, each wire of which is 0.09 inches or less in diameter.

Table 212-1 Minimum Vertical Clearance of Wires, Conductors, and Cables Above Ground, Rails, or Water (Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Nature of Surface underneath wires, conductors, or cables	Communication conductors and cables, guys, messengers, surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a), supply cables meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or 296-44-21209 (3)(c)[11] (ft)	Open supply line conductors of 0 to 750 V and supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or 296-44-21209 (3)(c) (ft)	Open supply line conductors		Trolley and electrified railroad contact conductors and associated span or messenger wires[1]	
			750 V to 22 kV (ft)	22 to 50 kV (ft)	0 to 750 V to ground (ft)	750 V to 50 kV to ground (ft)
Where wires, conductors, or cables cross over or overhang						
1. Track rails of railroads (except electrified railroads using over-head trolley conductors) [2 16 20]	[3 15]27	[3]27	[3]28	29	[4]22	[4]22
2. Roads, streets, alleys; nonresidential driveways, parking lots, and other areas subject to truck traffic [21 22]	[6 13 23]18	18	20	21	[5]18	[5]20
3. Residential driveways; commercial areas not subject to truck traffic [21 22]	[24]12	[8a]15	20	21	[5]18	[5]20

4. Other land traversed by vehicles such as cultivated, grazing, forest, orchard, etc.	18	18	20	21	—	—
5. Spaces or ways accessible to pedestrians only [9]	[8] [7] 15	[8a] [14] 15	15	16	16	18
6. Water areas not suitable for sailboating or where sailboating is prohibited [19]	15	15	17	17	—	—
7. Water areas suitable for sailboating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with an unobstructed surface area of: [17] [18] [19]						
(a) Less than 20 acres	18	18	20	21	—	—
(b) 20 to 200 acres	26	26	28	29	—	—
(c) 200 to 2000 acres	32	32	34	35	—	—
(d) Over 2000 acres	38	38	40	41	—	—
8. Public or private land and water areas posted for rigging or launching sailboats	Clearance above ground shall be 5 ft greater than in 7 above, for the type of water areas served by the launching site					
	Where wires, conductors, or cables run along and within the limits of highways or other road rights–of–way but do not overhang the roadway					
9. Roads, streets, or alleys	[13] [23] [25] 18	18	20	21	[5] 18	[5] 20
10. Roads in rural districts where it is unlikely that vehicles will be crossing under the line	[10] [12] 14	[10] 15	18	19	[5] 18	[5] 20

[1] Where subways, tunnels, or bridges require it, less clearances above ground or rails than required by Table 232–1 may be used locally. The trolley and electrified railroad contact conductor should be graded very gradually from the regular construction down to the reduced elevation.

[2] For wire, conductors, or cables crossing over mine, logging, and similar railways which handle only cars lower than standard freight cars, the clearance may be reduced by an amount equal to the difference in height between the highest loaded car handled and twenty feet, but the clearances shall not be reduced below that required for street crossings.

[3] These clearances may be reduced to twenty–five feet where paralleled by trolley–contact conductor on the same street or highway.

[4] In communities where twenty–one feet has been established, this clearance may be continued if carefully maintained. The elevation of the contact conductor should be the same in the crossing and next adjacent spans. (See WAC 296–44–31792 (4)(b) for conditions which must be met where uniform height above rail is impractical.)

[5] In communities where sixteen feet has been established for trolley and electrified railroad contact conductors 0 to 750 V to ground, or eighteen feet for trolley and electrified railroad contact conductors exceeding 750 V, or where local conditions make it impractical to obtain the clearance given in the table, these reduced clearances may be used if carefully maintained.

[6] If a communication service drop or a guy which is effectively grounded or is insulated against the highest voltage to which it is exposed, up to 8.7 kV, crosses residential streets and roads, the clearance may be reduced to sixteen feet at the side of the traveled way provided the clearance at the center of the traveled way is at least eighteen feet. This reduction in clearance does not apply to arterial streets and highways which are primarily for through traffic, usually on a continuous route.

[7] This clearance may be reduced to the following values:

	feet
(a) For insulated communication conductors and communication cables	8
(b) For conductors of other communication circuits	10
(c) For guys	8
(d) For supply cables meeting WAC 296–44–21209 (3)(a).	10

[8] This clearance may be reduced to the following values:

(a) Twelve feet for supply conductors limited to 300 V to ground

(b) Ten feet for drip loops of service drop conductors limited to 150 V to ground and meeting WAC 296–44–21209 (3)(b) or (c) and the portion of the associated service drop span located within fifteen feet of the service entrance to buildings.

[9] Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

[10] Where a supply or communication line along a road is located relative to fences, ditches, embankments, etc., so that the ground under the line would not be expected to be traveled except by pedestrians, this clearance may be reduced to the following values:

	feet
(a) Insulated communication conductor and communication cables	8
(b) Conductors of other communication circuits	10
(c) Supply cables of any voltage meeting WAC 296–44–21209 (3)(a) and supply cables limited to 150 V to ground meeting WAC 296–44–21209 (3)(b) or (c)	10

(d) Supply conductors limited to 300 V to ground	12
(e) Guys.	8

11 No clearance from ground is required for anchor guys not crossing track rails, streets, driveways, roads, or pathways.

12 This clearance may be reduced to thirteen feet for communication conductors.

13 Where this construction crosses over or runs along alleys, driveways, or parking lots, this clearance may be reduced to fifteen feet for spans limited to one hundred fifty feet.

14 Where supply circuits of 600 V or less, with transmitted power of 5000 W or less, are run along fenced (or otherwise guarded) private rights-of-way in accordance with the provisions specified in WAC 296-44-19409 (2)(b) this clearance may be reduced to ten feet.

15 The value may be reduced to twenty-five feet for guys, for cables carried on messengers, and for supply cables meeting WAC 296-44-21209 (3)(a). This value may be reduced to twenty-five feet for conductors effectively grounded throughout their length and associated with supply circuits of 0 to 22 kV, only if such conductors are stranded, are of corrosion-resistant material, and conform to the strength and tension requirements for messengers given in WAC 296-44-27821(9).

16 Adjacent to tunnels and overhead bridges which restrict the height of loaded rail cars to less than twenty feet, these clearances may be reduced by the difference between the highest loaded rail car handled and twenty feet, if mutually agreed to by the parties at interest.

17 For controlled impoundments, the surface area and corresponding clearances shall be based upon the design high water level. For other waters, the surface area shall be that enclosed by its annual high water mark, and clearances shall be based on the normal flood level. The clearance over rivers, streams, and canals shall be based upon the largest surface area of any one mile long segment which includes the crossing. The clearance over a canal, river, or stream normally used to provide access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

18 Where an overwater obstruction restricts vessel height to less than the following:

For a surface area in acres of	A reference vessel height in feet of
less than 20	16
20 to 200	24
200 to 2000	30
over 2000	36

the required clearance may be reduced by the difference between the reference vessel height given above and the overwater obstruction height, except that the reduced clearance shall not be less than that required for the surface area on the line crossing side of the obstruction.

19 Where the United States Army Corps of Engineers, or the state, or a surrogate thereof has issued a crossing permit, clearances of that permit shall govern.

20 See WAC 296-44-21253(8) for the required horizontal and diagonal clearances to rail cars.

21 These clearances do not allow for the future road resurfacing.

22 For the purpose of this rule, trucks are defined as any vehicle exceeding eight feet in height. Areas not subject to truck traffic are areas where truck traffic is not normally encountered or not reasonably anticipated.

23 For communications cables supported on a messenger, and with span lengths not exceeding one hundred fifty feet, the clearance may be reduced to seventeen feet above or along local streets or roads. This reduction does not apply for arterial streets or highways which are primarily for through traffic, usually on a continuous route.

24 This clearance may be reduced to ten feet for communication conductors and cables, guys, messengers and supply cables meeting WAC 296-44-21209 (3)(a).

25 Communication cables supported on a steel messenger may have a 60°F clearance of fifteen feet where span lengths do not exceed one hundred fifty feet and poles are back of curbs or other deterrents to vehicular traffic.

(2) Additional clearances for wires, conductors and cables. Greater clearances than specified in Table 212-1, (subsection (1) of this section) shall be provided where required by (a) and (b) of this subsection. Increases are cumulative where more than one apply.

Note 1: Additional clearances are not required for guys.

Note 2: Additional clearances are not required for communication cables supported on messengers and communication wires which do not overhang the traveled way, but run along and within the limits of public highways or other public rights-of-way for traffic.

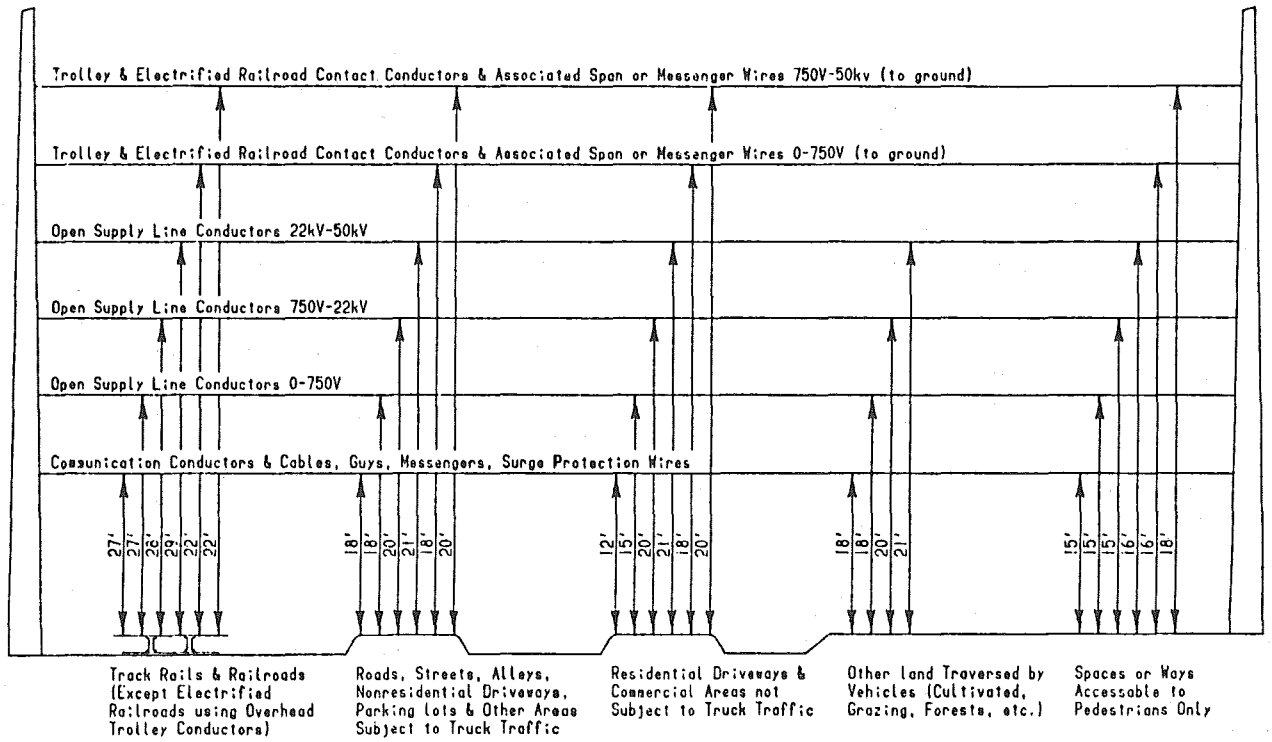


Fig 212-2a
Minimum Vertical Clearance Above Ground or Rails
(Re: Table 212-1)

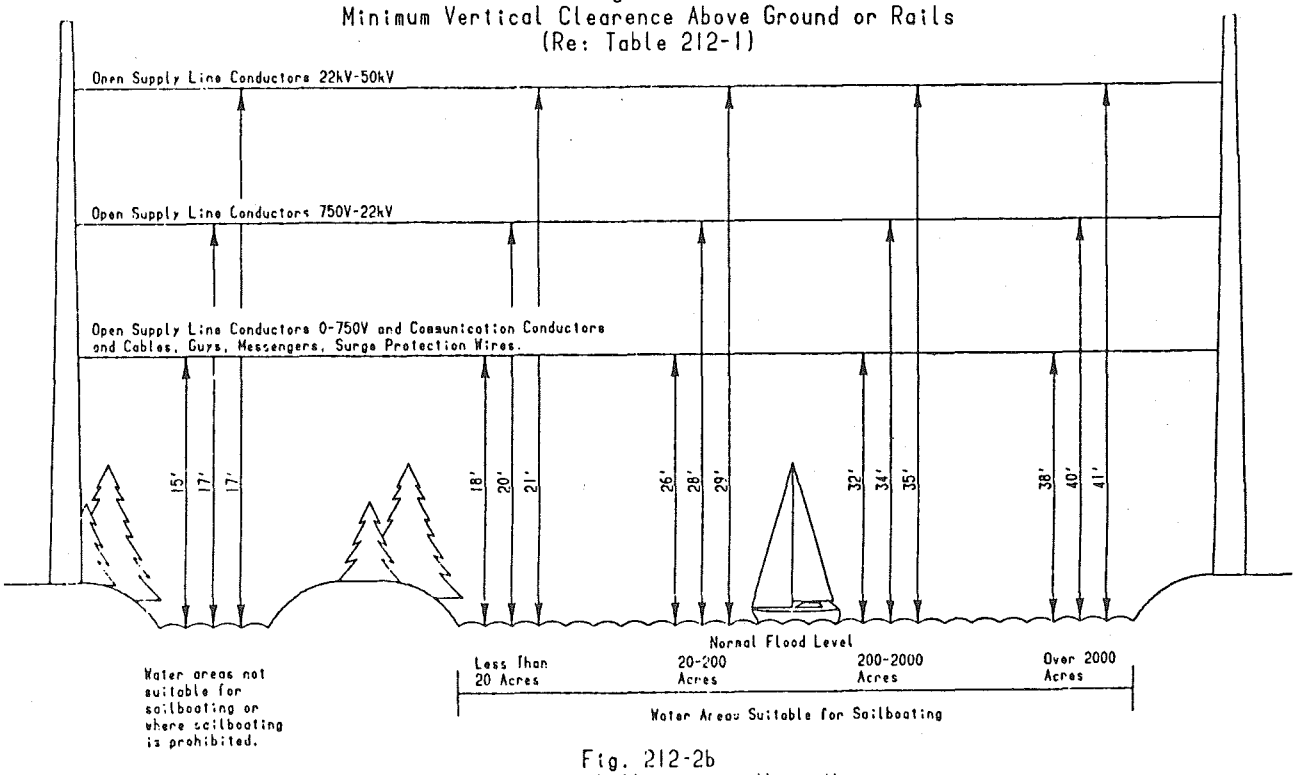


Fig. 212-2b
Minimum Vertical Clearances Above Water
(Re: Table 212-1)

(a) Voltages exceeding 50 kilovolts.

(i) For voltages between 50 and 470 kilovolts, the clearance specified in Table 212–1, (subsection (1) of this section) shall be increased at the rate of 0.4 in per kilovolt in excess of 50 kilovolts. For voltages exceeding 470 kV, the clearance shall be determined by the alternate method given by subsection (4) of this section. All clearances for lines over 50 kV shall be based on the maximum operating voltage.

Note: For voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground, clearances less than those required above are permitted for systems with known maximum switching surge factors (see subsection (4) of this section).

(ii) The additional clearance for voltages exceeding 50 kV specified in (a)(i) of this subsection shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet (1000 m) above mean sea level.

(iii) For voltages exceeding 98 kV alternating current to ground, or 139 kV direct current to ground, either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were shortcircuited to ground. For this determination, the conductors shall be at a final unloaded sag at 120°F.

(b) Sag increase.

(i) No additional clearance is required for trolley and electrified railroad contact conductors.

(ii) No additional clearance is required where span lengths are less than those listed in subsection (1)(b) of this section, and the maximum conductor temperature for which the supply line is designed to operate is 120°F or less.

(iii) Where supply lines are designed to operate at or below a conductor temperature of 120°F and spans are longer than specified in subsection (1)(b) of this section, the minimum clearance at midspan shall be increased by the following amounts.

(A) General.

For spans exceeding the limits specified in WAC 296-44-21230 (1)(b), the clearance specified in Table 212-1 shall be increased by 0.1 foot for each ten feet of the excess of span length over such limits. See (b)(iii)(C) of this subsection.

(B) Railroad crossings.

For spans exceeding the limits specified in subsection (1)(b) of this section, the clearance specified in Table 212-1 shall be increased by the following amounts for each ten feet by which the crossing span length exceeds such limits. See (b)(iii)(C) of this subsection.

Loading district	Amount of increase per 10 feet: Large conductors (ft)	[1]Small conductors (ft)
Heavy and medium	0.15	0.30
Light	0.10	0.15

[1] A small conductor is a conductor having an overall diameter of metallic material equal to or less than the following values:

Material	Outside diameter of conductor: Solid (inches)	Stranded (inches)
All copper	0.160	0.250
Other than all copper	0.250	0.275

(C) Limits.

The maximum additional clearance need not exceed the arithmetic difference between final unloaded sag at a conductor temperature of 60°F (15°C), no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(I) 32°F no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(II) 120°F (50°C), no wind.

(iv) Where supply lines are designed to operate at conductor temperature above 120°F regardless of span length, the minimum clearance at midspan specified in subsections (1) and (2)(a) of this section shall be increased by the difference between final unloaded sag at a conductor temperature of 60°F no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(A) 32°F no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(B) The maximum conductor temperature for which the supply line is designed to operate, with no horizontal displacement.

Note: The phase and neutral conductors of a supply line should be considered separately when determining the sag increases of each due to temperature rise.

(v) Where minimum clearance is not at midspan, the additional clearances specified in (b)(iii) and (iv) of this subsection may be reduced by multiplying by the following factors:

Distance from nearer support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
5	0.19
10	0.36
15	0.51
20	0.64
25	0.75
30	0.84
35	0.91
40	0.96
45	0.99
50	1.00

[1] Interpolate for intermediate values.

In applying this rule, the "point of crossing" is the location under the conductors of any topographical feature which is the determinant of the clearance.

(3) Clearance to live parts of equipment mounted on structures.

(a) Basic clearances. The vertical clearance above ground for unguarded live parts such as potheads, transformer bushings, surge arresters, and short lengths of supply conductors connected thereto, which are not subject to variation in sag, shall be as shown in Table 212-2.

Table 212–2. Minimum Vertical Clearance of Rigid Live Parts Above Ground

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly de–energizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Nature of surface below live parts	0 to 750 V	750 V to 22 kV	22 to 50 kV
1. Where live parts overhang:			
a. Roads, streets, alleys; nonresidential driveways; parking lots and other areas subject to truck traffic [4 5]	16	18	19
b. Residential driveways; commercial areas not subject to truck traffic [4 5]	[1]13	18	19
c. Other land traversed by vehicles such as cultivated land, grazing land, forest, orchard, etc.	16	18	19
d. Spaces and ways accessible to pedestrians only. [6]	[1 3 4]13	13	14
2. Where live parts are along and within the limits of highways or other road rights–of–way but do not overhang the roadway:			
a. Roads, streets, and alleys	[2]16	18	19
b. Roads in rural districts where it is unlikely that vehicles will be crossing under the line.	[2]13	16	17

1 This clearance may be reduced to the following values:

	feet
(a) Live parts limited to 300 V to ground	12
(b) Live parts limited to 150 V to ground and drip loops of service drop conductors limited to 150 V to ground and meeting WAC 296–44–21209 (3)(b) or (c).	10

2 Where a supply line along a road is limited to 300 V to ground and is located relative to fences, ditches, embankments, etc., so that the ground under the line would not be expected to be traveled except by pedestrians, this clearance may be reduced to twelve feet.

3 Where supply circuits of 600 V or less, with transmitted power of 5000 W or less, are run along fenced (or otherwise guarded) private rights–of–way in accordance with the provisions specified in WAC 296–44–19409 (2)(b), this clearance may be reduced to ten feet.

4 For the purpose of this rule, trucks are defined as any vehicle exceeding eight feet in height.

5 These clearances do not allow for future road resurfacing.

6 Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

(b) Additional clearances for voltages exceeding 50 kilovolts.

(i) For voltages between 50 and 470 kilovolts, the clearance specified in Table 212–2 ((a) of this subsection) shall be increased at the rate of 0.4 in per kilovolt in excess of 50 kV. For voltages exceeding 470 kV, the clearances shall be determined by the alternate method given by subsection (4) of this section. All clearances for lines over 50 kV shall be based on the maximum operating voltage.

Note: For voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground, clearances less than those required above are permitted for systems with known maximum switching surge factors. (See subsection (4) of this section.)

(ii) The additional clearance for voltages exceeding 50 kV specified in (b)(i) of this subsection shall be increased three percent for each one thousand feet in excess of thirty–three hundred feet above mean sea level.

(iii) For voltages exceeding 98 kV alternating current to ground, or 139 kV direct current to ground either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were short–circuited to ground.

(4) Alternate clearances for voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground. The clearances specified in subsections (1), (2) and (3) of this section may be reduced for circuits with known switching surge factors but shall not be less than the values computed by adding the reference height to the electrical component of clearance.

(a) Sag conditions of line conductors. Minimum vertical clearances shall be maintained under the following conductor temperatures and conditions:

(i) 32°F no wind, with radial thickness of ice specified in WAC 296–44–26309(2) for the loading district concerned.

(ii) 120°F, no wind.

(iii) Maximum conductor temperature, for which the line is designed to operate, if greater than 120°F, with no horizontal displacement.

(b) Reference heights are shown in Table 212–3.

(c) Electrical component of clearance.

(i) The clearance computed by the following equation and listed in Table 212–4 shall be added to the reference heights specified in Table 212–3.

$$D = 3.28\left[\frac{V \cdot (PU) \cdot a}{500\,K}\right]^{1.667} bc \quad \text{(ft)}$$

where

V maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU maximum switching surge factor expressed in per–unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety–eight percent probability that the maximum switching surge generated per breaker operation

does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

c = 1.2, the margin of safety;

K = 1.15, the configuration factor for conductor–to–plane gap.

(ii) The value of D shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(iii) Either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if the largest anticipated truck, vehicle, or equipment under the line were shortcircuited to ground. For this determination, the conductors shall be at a final unloaded sag at 120°F.

(d) Limit. The clearances derived from (b) and (c) of this subsection shall be not less than the clearances given in Tables 212–1 or 212–2 computed for 98 kilovolts alternating current to ground in accordance with subsection (2)(a) or (3)(b) of this section, respectively.

Table 212–3 Reference Heights

Nature of surface underneath lines	Ft
a. Track rails of railroads (except electrified railroads using overhead trolley conductors) [1]	22
b. Streets, alleys, roads, driveways, and parking lots	14
c. Spaces and ways accessible to pedestrians only[2]	9
d. Other land, such as cultivated, grazing, forest or orchard, which is traversed by vehicles	14
e. Water areas not suitable for sailboating or where sailboating is prohibited	14
f. Water areas suitable for sailboating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with unobstructed surface area [3] [4]	
(1) less than 20 acres	18
(2) 20 to 200 acres	26
(3) 200 to 2000 acres	32
(4) over 2000 acres	38
g. In public or private land and water areas posted for rigging or launching sailboats, the reference height shall be five feet greater than in f. above, for the type of water areas serviced by the launching site.	

1 See WAC 296–44–21253(8) for the required horizontal and diagonal clearances to rail cars.

2 Spaces and ways accessible to pedestrians only are areas where vehicular traffic is not normally encountered or not reasonably anticipated.

3 For controlled impoundments, the surface area and corresponding clearances shall be based upon the design high water level. For other waters, the surface area shall be that enclosed by its annual high water mark, and clearances shall be based on the normal flood level. The clearance over rivers, streams, and canals shall be based upon the largest surface area of any one–mile–long segment which includes the crossing. The clearance over a canal or similar waterway providing access for sailboats to a larger body of water shall be the same as that required for the larger body of water.

4 Where an overwater obstruction restricts vessel height to less than the following:

For a surface of	A reference vessel height of ft
(1) less than 20 acres	16
(2) 20 to 200 acres	24
(3) 200 to 2000 acres	30
(4) over 2000 acres (800 ha)	36

The required clearance may be reduced by the difference between the reference vessel height given above and the overwater obstruction height, except that the reduced clearance shall not be less than that required for the surface area on the line crossing side of the obstruction.

Table 212–4 Electrical Component of Clearance Above Ground or Rail in (c)(i) of this subsection (Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level. Increase clearance to limit electrostatic effects in accordance with (c)(iii) of this subsection.)

Maximum operating voltage phase–to–phase (kV)	Switching surge factor (per unit)	Switching surge (kV)	Electrical component of clearance (ft)
242	4.5 or less	839 or less	[1]8.6
362	2.8 or less	839 or less	[1]8.6
550	1.9 or less	839 or less	[1]8.6
	2.0	898	10.8
	2.2	988	12.7
	2.4	1079	14.6
	2.6	1168	16.7
800	1.6	1045	13.9
	1.8	1176	16.9
	2.0	1306	20.1
	2.1 or more	1372 or more	[2]21.8

1 Limited by (d) of this subsection.

2 Limited by subsections (1) and (2) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–21230, filed 7/25/86.]

WAC 296–44–21241 Clearances between wires, conductors, and cables carried on different supporting structures. (1) General.

Crossings should be made on a common supporting structure, where practical. In other cases, the clearance between any two crossing or adjacent wires, conductors, or cables carried on different supporting structures shall not be any less at any location in the spans than that required by WAC 296–44–21241. The minimum clearance shall be as illustrated by a clearance envelope developed under WAC 296–44–21241 (1)(b) applied at the positions on or within conductor movement envelopes developed under WAC 296–44–21241 (1)(a) at which the two wires, conductors, or cables would be closest together. For purposes of this determination, the relevant positions of the wires, conductors, or cables on or within their respective conductor movement envelopes are those which can occur when (a) both are simultaneously subjected to the same ambient air temperature and wind

loading conditions and (b) each is subjected individually to the full range of its icing conditions and applicable design electrical loading.

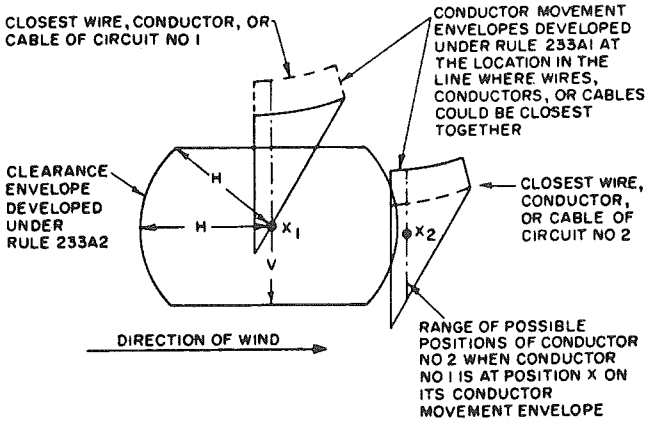


Fig. 212–3

Use of Clearance Envelope and Conductor Movement Envelopes to Determine Applicable Clearance

Note 1: In this illustration Conductor No. 2 is closest at position X_2 to Conductor No. 1, where the latter is at position X_1.

Note 2: Fig. 212–3 is a graphical illustration of the application of WAC 296–44–21241(1). Alternative methods which assure compliance with these rules may be used.

(a) Conductor movement envelope.

(i) Development. The conductor movement envelope shall be developed from the locus of the most displaced conductor positions shown in Fig. 212–4. The conductor positions A–E which define the conductor movement envelope include the effects of the basic conditions shown in Fig. 212–4 and the sag increases specified in WAC 296–44–21241 (1)(a)(ii) as applicable.

Fig. 212–4
Conductor Movement Envelope

SEE ILLUSTRATION
(WAC 296–44–21241, Fig. 212–4)

Point	Conductor Temperature	Sag	Ice Loading	Wind Displacement[1]
A	60°F	initial	none	none
B	60°F	initial	none	6 lb per sq ft[2]
C	60°F	final	none	none
D	60°F	final	none	6 lb per sq ft[2]
E_1[3 4]	The greater of 120°F or maximum operating	final	none	none
E_2[3 4]	32°F	final	as applicable	none

[1] The direction of the wind shall be that which produces the minimum separation. The displacement of the wire, conductors or cables includes the deflection of suspension insulators and flexible structures.

[2] Wind loading may be reduced to four pounds per square foot in areas sheltered by buildings, terrain, or other obstacles.

[3] If no sag increase is required by WAC 296–44–21241 (1)(a)(ii) point E = point C.

[4] Line D–E shall be considered to be straight unless the actual concavity characteristics are known.

(ii) Sag increase.

(A) No sag increase is required for trolley and electrified railroad contact conductors.

(B) No sag increase is required where span lengths are less than those listed below and the maximum conductor temperature for which the supply line is designed to operate is 120°F or less.

Loading district	Span lengths (ft)
Heavy	[1]175
Medium	[1]250
Light	350

[1]One hundred fifty feet in heavy–loading district and two hundred twenty–five feet in medium–loading district for three–strand conductors, each of which is 0.09 in or less in diameter.

(C) Where supply lines are designed to operate at or below a conductor temperature of 120°F and spans are longer than specified in WAC 296–44–21241 (1)(a)(ii)(B), the sag at midspan shall be increased by the following:

(I) Where crossing occurs at midspan in the upper conductor sag shall be increased by the following amounts for each ten feet by which the crossing span length exceeds the limits specified in WAC 296–44–21241 (1)(a)(ii)(B).

Loading district	Amount of increase per 10 ft: Large conductors (ft)	Amount of increase per 10 ft: Small[1] conductors (ft)
Heavy and medium	0.15	0.30
Light	0.10	0.15

[1] A small conductor is a conductor having an overall diameter of metallic material equal to or less than the following values:

	Outside diameter of conductor: Solid (inches)	Outside diameter of conductor: Stranded (inches)
All copper	0.160	0.250
Other than all copper	0.250	0.275

(II) Limits. The maximum additional sag need not exceed the arithmetic difference between final unloaded sag at a conductor temperature of 60°F no wind, and final sag at the conductor temperature and condition (aa) or (bb) below, whichever difference is greater, computed for the crossing span.

(aa) 32°F, no wind, with radial thickness of ice, if any, specified in Rule 250B for the loading district concerned.

(bb) 120°F, no wind.

(D) Where upper conductors are designed to operate at a conductor temperature above 120°F, the minimum sag at midspan specified in WAC 296-44-21241 (1)(a)(i) and (1)(a)(ii)(B) shall be increased by the difference between final unloaded sag at a conductor temperature of 60°F, no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(I) 32°F, no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

(II) The maximum conductor temperature for which the supply line conductor is designed to operate, with no horizontal displacement.

(E) Where crossing is not at midspan of the upper conductor and under conditions where the upper span exceeds those specified in WAC 296-44-21241 (1)(a)(ii)(B), the additional sag may be reduced by multiplying the additional sag determined by WAC 296-44-21241 (1)(a)(ii)(C) and (D) by the following factors:

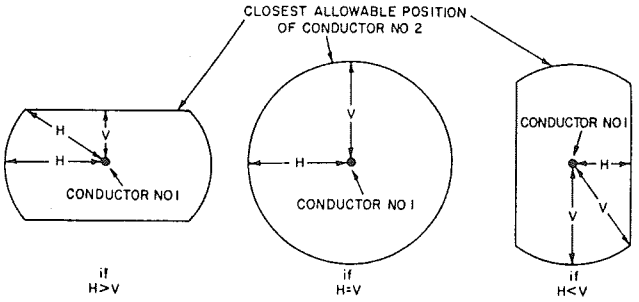
Distance from nearest support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
5	0.19
10	0.36
15	0.51
20	0.64
25	0.75
30	0.84
35	0.91
40	0.96
45	0.99
50	1.00

[1] Interpolate for intermediate values.

(b) Clearance envelope.

The clearance envelope shown in Fig. 212-5 shall be determined by the horizontal clearance (H) required by WAC 296-44-21241(2) and the vertical clearance (V) required by WAC 296-44-21241(3).

Fig. 212-5
Clearance Envelope



(2) Horizontal clearance.

(a) Basic clearance requirements. The horizontal clearance between crossing or adjacent wires, conductors or cables carried on different supporting structures shall not be less than five feet. For voltages between the wires, conductors, or cables exceeding 129 kV, additional clearance of 0.4 inches per kV over 129 kV shall be provided.

Note: The horizontal clearance between anchor guys of different supporting structures may be reduced to six inches and may be reduced to two feet between other guys, span wires and neutral conductors meeting WAC 296-44-21209 (5)(a).

(b) Alternate clearances for voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground. The clearances specified in WAC 296-44-21241 (2)(a) may be reduced for circuits with known switching surge factors but shall not be less than the clearances derived from the computations required in WAC 296-44-21265 (2)(c)(i) and (ii).

(3) Vertical clearance.

(a) Basic clearance. The vertical clearance between any crossing or adjacent wires, conductors, or cables carried on different supporting structures shall not be less than those shown in Table 212-5.

Note: No vertical clearance is required between wires, conductors, or cables that are electrically interconnected at the crossing.

Table 212-5. Vertical Clearances of Wires, Conductors, and Cables Carried on Different Supporting Structures
(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)
(The insertion of a given clearance in brackets indicates that in general, the lines operating at the voltage named above this clearance should not cross over the lines at the voltage to the left of the clearance in brackets.)

Upper level / Lower level	Communications conductors, cables, and messengers (ft)	Supply cables and messengers meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply conductors, 0 to 750 V; supply cables over 750 V meeting WAC 296-44-21209 (3)(a) or (b)		Open supply conductors		Guys, span wires, neutral[1] conductors meeting WAC 296-44-21209 (5)(a), and surge protection wires (ft)
			Line conductors (ft)	Service drops (ft)	750 V to 22 kV (ft)	22 to 50 kV (ft)	
Communications conductors, cables, and messengers	[2]2	2	4	[6]2	[5]6	6	2
Supply cables and messengers meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c)	[6]2	[6]2	[6]2	[6]2	[6]2	4	[6]2
Open supply con-conductors, 0 to 750 V; supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or (c)	[4]	4	[6]2	[6]2	[6]2	4	2
Open supply conductors							
750 V to 22 kV	[[5]6]	[4]	[[6]2]	[4]	[[6]2]	4	4
22 to 50 kV	[6]	[6]	[4]	[6]	[4]	4	4
Trolley and electrified railroad contact conductors and associated span and messenger wires	[3]4	[3]4	[3 4]4	[3]4	6	6	[3]4
Guys[7], span wires, neutral conductors meeting WAC 296-44-21209 (5)(a), and surge protection wires	[2]2	[2]2	[6]2	[6]2	4	4	[1 2]2

1 This clearance may be reduced where both guys are electrically interconnected.

2 The clearance of communication conductors and their guy, span, and messenger wires from each other in locations where no other classes of conductors are involved may be reduced by mutual consent of the parties concerned, subject to the approval of the regulatory body having jurisdiction, except for fire-alarm conductors and conductors used in the operation of railroads, or where one set of conductors is for public use and the other used in the operation of supply systems.

3 Trolley and electrified railroad contact conductors of more that 750 V should have at least six feet clearance. This clearance should also be provided over lower voltage trolley and electrified railroad contact conductors unless the crossover conductors are beyond reach of a trolley pole leaving the trolley-contact conductor or are suitably protected against damage from trolley poles leaving the trolley-contact conductor.

4 Trolley and electrified railroad feeders are exempt from this clearance requirement for contact conductors if they are of the same nominal voltage and of the same system.

5 This clearance may be reduced to four feet where supply conductors of 750 V to 8.7 kV cross a communication line more than six feet horizontally from a communication structure.

6 Where a two foot clearance is required at 60°F, and where conditions are such that the sag in the upper conductor would increase more than one and one-half feet at the crossing point under any condition of sag stated in WAC 296-44-21241 (1)(a)(ii), the two foot clearance shall be increased by the amount of sag increase less one and one-half feet.

7 These clearances may be reduced by not more than twenty-five percent to a guy insulator, provided that full clearance is maintained to its metallic end fittings and the guy wires. The clearance to an insulated section of a guy between two insulators may be reduced by not more than twenty-five percent provided that full clearance is maintained to the uninsulated portion of the guy.

Fig. 212–6
Minimum Vertical Clearance Between Wires on Difference Supports
(Re: Table 212–5)

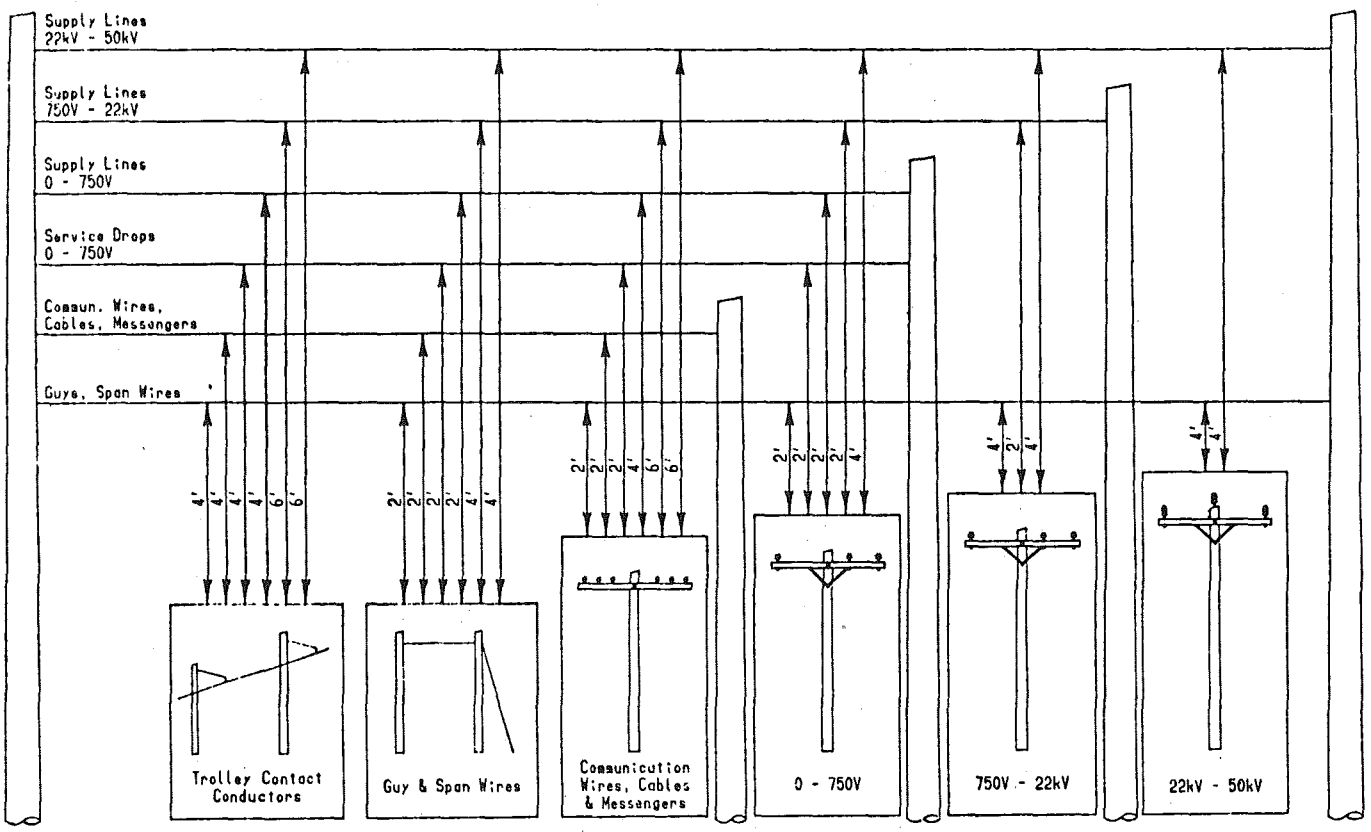


Fig 212-6
Minimum Vertical Clearance Between Wires on Different Supports
(Re: Table 212-5)

(b) Voltages exceeding 50 kilovolts.

(i) The clearance given in Table 212–5 shall be increased by the sum of the following: For the upper level conductors between 50 and 470 kilovolts, the clearance shall be increased at the rate of 0.4 inches per kilovolt in excess of 50 kilovolts. For the lower level conductors exceeding 50 kilovolts, the additional clearance shall be computed at the same rate. For voltages exceeding 470 kilovolts, the clearance shall be determined by the alternate method given in WAC 296–44–21241 (3)(c). The additional clearance shall be computed using the maximum operating voltage if above 50 kilovolts and nominal voltage if below 50 kilovolts.

Note: For voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground, clearances less than those required above are permitted for systems with known switching surge factors. (See WAC 296–44–21241 (3)(c).)

(ii) The additional clearance for voltages in excess of 50 kilovolts specified in WAC 296–44–21241 (3)(b)(i) shall be increased three percent for each one thousand feet in excess of thirty–three hundred feet above mean sea level.

(c) Alternate clearances for voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground. The clearances specified in WAC 296–44–21241 (3)(a) and (b) may be reduced where the higher voltage circuit has a known switching surge factor. For these computations, communication conductors and cables, guys, messengers, neutral conductors meeting WAC 296–44–21209 (5)(a), and supply cables meeting WAC 296–44–21209 (3)(a) shall be considered at zero voltage. The clearances shall not be less than the values computed by adding the reference heights to the electrical component of clearance.

(i) Reference heights.

Reference height	Ft
(1) Supply lines	0
(2) Communication lines	2

(ii) Electrical component of clearance.

(A) The alternate clearance is computed by the following equation and listed in Table 212-6.

$$D = 3.28 \left[\frac{[V_H \cdot (PU) + V_L]\, a}{500\, K} \right]^{1.667} bc \quad \text{(ft)}$$

where

V_H higher voltage circuit maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

V_L lower voltage circuit maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU higher voltage circuit maximum switching surge factor expressed in per-unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

c = 1.2, the margin of safety;

K = 1.4, the configuration factor for conductor-to-conductor gap.

(B) The value of D calculated by WAC 296-44-21241 (3)(c)(ii)(A) shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(iii) Limit. The value of D shall not be less than the clearance required by WAC 296-44-21241 (3)(a) and (b) with the lower voltage circuit at ground potential.

Table 212-6. Clearance Between Supply Wires, Conductors, and Cables in WAC 296-44-21241 (3)(c)(ii)(A) (Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.)

Higher voltage circuit		Lower voltage circuit						
Maximum operating voltage phase to phase (kV)	Switching surge factor (per unit)	Maximum operating voltage, phase to phase (kV) 121 (ft)	145 (ft)	169 (ft)	242 (ft)	362 (ft)	550 (ft)	800 (ft)
242	3.3 or less	[1]7.0	[1]7.0	[1]7.0	[1]7.0			
362	2.4	[1]9.3	[1]9.3	[1]9.3	[1]9.3	9.4		
	2.6	[1]9.3	[1]9.3	[1]9.3	[1]9.3	10.3		
	2.8	[1]9.3	[1]9.3	[1]9.3	9.7	11.3		
	3.0	[1]9.3	9.4	9.7	10.7	12.3		
550	1.8	[1]13.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	13.6	
	2.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	[1]13.0	15.3	
	2.2	[1]13.0	[1]13.0	[1]13.0	[1]13.0	14.1	17.0	
	2.4	[1]13.0	[1]13.0	[1]13.0	14.0	15.8	18.8	
	2.6	[2]13.6	[2]14.1	14.5	15.6	17.5	20.7	
800	1.6	[1]17.7	[1]17.7	[1]17.7	[1]17.7	[1]17.7	18.5	22.5
	1.8	[1]17.7	[1]17.7	[1]17.7	[1]17.7	[1]17.7	20.9	25.4
	2.0	[1]17.7	[1]17.7	[1]17.7	18.4	20.4	23.1	27.5
	2.2	[2]18.4	[2]18.9	[2]19.4	[2]20.8	[2]23.1	[2]26.7	[2]30.8

[1] Limited by WAC 296-44-21241 (3)(c)(iii).

[2] Need not be greater than the values specified in WAC 296-44-21241 (3)(a) and (b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21241, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-21253 Clearance of wires, conductors, and cables from buildings, bridges, rail cars, swimming pools, and other installations. (1) Application. The basic vertical and horizontal clearances specified in WAC 296-44-21253 (2), (3), (4), (5), and (8) apply under the following conditions.

(a) Horizontal clearances. Clearances shall be applied with the wire, conductor, or cable displaced from rest by a six pound per square foot wind at final sag at 60°F. This may be reduced to four pounds per square foot (190 Pa) wind in areas sheltered by buildings, terrain, or other obstacles. The displacement of the wire, conductor,

or cable shall include deflection of suspension insulators and flexible structures.

Note: No wind displacement is required for communication conductors and cables, guys, messengers, surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a) supply cables of all voltages meeting WAC 296-44-21209 (3)(a) and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c).

(b) Vertical clearance.

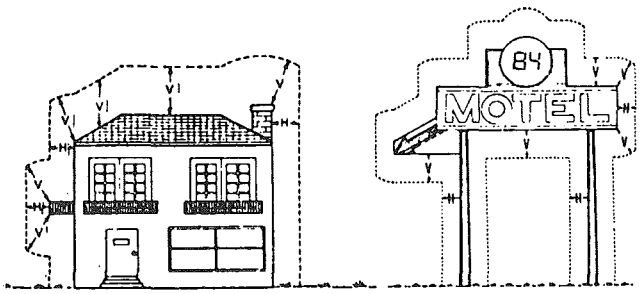
(i) Conductor temperature of 60°F, no wind, with final unloaded sag in the wire, conductors, or cables, or with initial unloaded sag in cases where these facilities are maintained approximately at initial unloaded sags.

(ii) Span lengths not greater than the following:

Loading District	Span Lengths (feet)
Heavy	[1]175
Medium	[1]250
Light	350

[1] One hundred fifty feet in heavy-loading district and two hundred twenty-five feet in medium-loading district for three-strand conductors, each of which is 0.09 inches or less in diameter.

(c) Diagonal clearance. The horizontal clearance governs above the roof level or top of an installation to the point where the diagonal equals the vertical clearance requirement. Similarly, the horizontal clearance governs above or below projections from buildings, signs, or other installations to the point where the diagonal equals the vertical clearance requirement. The fifteen feet for roofs accessible to pedestrians agrees with Table 212-1 for spaces and ways accessible to pedestrians only. From this point the diagonal clearance shall equal the vertical clearance as shown in Figure 212-7. This rule should not be interpreted as restricting the installation of a trolley-contact conductor over the approximate center line of the track it serves.



V = Minimum vertical clearance, measured either diagonally or vertically.
H = Minimum horizontal clearance.

Fig. 212-7
Clearance Diagram for Building and Other Structures
(Re: Table 212-7)

(2) Clearances of wires, conductors, and cables from other supporting structures.

Wires, conductors, or cables of one line passing near a lighting support, traffic signal support, or a supporting structure of a second line, without being attached thereto, shall have clearance from any part of such structure not less than the following:

(a) A minimum horizontal clearance of five feet for voltages up to 50 kilovolts.

(b) A minimum vertical clearance of six feet for voltages below 15 kilovolts and a minimum vertical clearance of seven feet for voltages between 15 and 50 kilovolts.

Note 1: Where the voltage does not exceed 300 V to ground and the cables meet the requirements of WAC 296-44-21209 (3)(a), (b) or (c), the vertical and horizontal clearances may be reduced to four feet measured at 60°F without wind deflection.

Note: Clearances of wires, conductors, and cables from adjacent line structure guy wires are given in WAC 296-44-21241.

Note 2: The vertical clearances may be reduced by two feet if both of the following conditions are met:

(i) The wires, conductors, or cables above and the supporting structure of another line below are operated and maintained by the same utility.

(ii) Employees do not work above the top of the supporting structure unless:

(A) The upper circuit is de-energized or temporarily insulated or repositioned, or

(B) Other equivalent measures are taken.

Table 212-7 Clearance of Wires, Conductors, and Cables Passing by but Not Attached to Building and Other Installations Except Bridges

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definitions section for voltages of other systems.)

Clearance of	Communication conductors and cables, guys, messengers, surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a), supply cables of all voltages meeting WAC 296-44-21209 (3)(a), and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply line conductors 0 to 750 V, and supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply line conductors		
			750 V to 8.7 kV (ft)	8.7 to 22 kV (ft)	22 to 50 kV (ft)
Buildings					
Horizontal					
To walls and projections	[7]3	[2 1]5	[1 2]5	6	7
To unguarded windows	3	[2 1]5	5	6	7
To balconies and areas accessible to pedestrians[3]	3	5	5	6	7

Vertical					
Above or below roofs or projections not accessible to pedestrians[3]	3	10	10	10	11
Above or below balconies and roofs accessible to pedestrians[3]	8	[5]15	15	15	16
Above roofs accessible to truck traffic[6]	18	18	20	20	21
Above roofs accessible to vehicles but not subject to truck traffic[6]	10	[5]15	20	20	21
Signs, chimneys, radio and television antennas, tanks, and other installations not classified as buildings or bridges[4]					
Horizontal	3	[1 2 5]	[1 2 5]	[3]6	7
Vertical above or below	3	[1]5	8	8	9

1 Where building, sign, chimney, antenna, tank, or other installation does not require maintenance such as painting, washing, changing of sign letters, or other operation which would require persons to work or pass between supply conductors and structure, the clearance may be reduced to three feet.

2 Where available space will not permit this value, the clearance may be reduced to the maximum practical clearance but the minimum clearance may not be less than three feet provided the conductors, including splices and taps, have covering which provides sufficient di-electric to prevent a short circuit in case of a momentary contact between the conductors and a grounded surface.

3 A roof, balcony, or area is considered accessible to pedestrians if the means of access is through a doorway, ramp, stairway, or permanently mounted ladder.

4 The required clearances shall be to the closest approach of motorized signs or moving portions of installations covered by WAC 296-44-21253.

5 This clearance may be reduced to twelve feet to supply conductors limited to 300 V to ground.

6 For the purpose of this rule, trucks are defined as any vehicles exceeding eight feet in height.

7 This clearance may be reduced to three in for the grounded portions of guys.

(3) Clearances of wires, conductors, and cables from buildings, signs, chimneys, radio and television antennas, tanks, and other installations except bridges.

(a) Ladder space. Where buildings or other installations exceed three stories (or fifty feet) in height, overhead lines should be arranged where practical so that a clear space or zone at least six feet wide will be left either adjacent to the building or beginning not over eight feet from the building, to facilitate the raising of ladders where necessary for fire fighting.

Note: This requirement does not apply where it is the unvarying rule of the local fire departments to exclude the use of ladders in alleys or other restricted places which are generally occupied by supply conductors and cables.

(b) Basic clearances. Unguarded or accessible supply wires, conductors, or cables may be run either beside or over buildings or other installations and any projections therefrom. The vertical and horizontal clearances of such wires, conductors, or cables shall be not less than the values given in Table 212-7.

(c) Guarding of supply conductors. Where the clearances set forth in Table 212-7 cannot be obtained, supply conductors shall be guarded.

Note: Metal-clad supply cables meeting WAC 296-44-21209 (3)(a) are considered to be guarded within the meaning of this rule.

(d) Supply conductors attached to buildings. Where the permanent attachment of supply conductors of any class to building is necessary for an entrance, such conductors shall meet the following requirements:

(i) Conductors of more than 300 volts to ground shall not be carried along or near the surface of the building unless they are guarded or made inaccessible.

(ii) Clearance of wires from building surface shall be not less than those required in Table 212-16 (WAC 296-44-21265 (5)(a)) for clearance of conductors from supports.

(iii) Service-drop conductors shall not be readily accessible and when not in excess of 600 volts they shall have a clearance of not less than the following:

(A) Eight feet from the highest point of roofs or balconies over which they pass.

Note 1: Where the voltage between conductors does not exceed 300 volts and the roof or balcony is not readily accessible, the clearance may be not less than three feet. A roof or balcony is considered readily accessible if the means of access is through a doorway, ramp, stairway, or permanently mounted ladder.

Note 2: Service-drop conductors of 300 volts or less which do not pass over other than a maximum of four feet of the overhang portion of the roof for the purpose of terminating at a (through-the-roof) service raceway or approved support may be maintained at a minimum of eighteen inches from any portion of the roof over which they pass.

(B) Three feet in any direction from windows, doors, porches, fire escapes, or similar locations.

Note 1: This does not apply to service-drop conductors meeting WAC 296-44-21209 (3)(c) above the top level of a window.

Note 2: This does not apply to windows that are not designed to open.

(e) Communications conductors attached to buildings. Communications conductors and cables may be attached directly to buildings.

(4) Clearances of wires, conductors, and cables from bridges.

(a) Basic clearances. Supply wires, conductors, and cables which pass under, over, or near a bridge shall have basic vertical and horizontal clearances therefrom not less than given in Table 212-8.

Note: This rule does not apply to guys, span wires, effectively grounded surge protection wires, neutrals meeting WAC 296-44-21209 (5)(a), and supply cables meeting WAC 296-44-21209 (3)(a).

Table 212-8. Clearance of Supply Wires Conductors and Cables from Bridges

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following breaker operations. See definitions section for voltages of other systems.)

	Supply cables meeting WAC 296-44-21209 (3)(b) or (c)[7]	Open supply line conductors			
		0 to 750 V	750 V to 8.7 kV	8.7 to 22 kV	22 to 50 kV
	(ft)	(ft)	(ft)	(ft)	(ft)
Clearance over bridges[1]					
Attached[3]	3	3	3	5	6
Not attached	10	10	10	10	10
Clearance beside, under, or within bridge structure[6]					
Readily accessible portions of any bridge including wing, walls, and bridge attachments[1]					
Attached[3]	3	3	3	5	6
Not attached	5	5	5	6	7
Ordinarily inaccessible portions of bridges (other than brick, concrete, or masonry) and from abutments[2]					
Attached[3 5]	0.5	0.5	3	5	6
Not attached[4 5]	3	3	3	6	7

1 Where over traveled ways on or near bridges, the clearances of WAC 296-44-21230 apply also.

2 Bridge seats of steel bridges carried on masonry, brick, or concrete abutments which require frequent access for inspection shall be considered as readily accessible portions.

3 Clearance from supply conductors to supporting arms and brackets attached to bridges shall be the same as specified in Table 212-16 (WAC 296-44-21265 (5)(a)) if the supporting arms and brackets are owned, operated, or maintained by the same utility.

4 Conductors should have the clearances given in this row increased as much as is practical.

5 Where conductors passing under bridges are adequately guarded against contact by unauthorized persons and can be deenergized for maintenance of the bridge, clearances of the conductors from the bridge, at any point, may have the clearances specified in Table 221-16 for clearance from surfaces of support arms plus one-half the final unloaded sag of the conductor at that point.

6 Where the bridge has moving parts, such as a lift bridge, the required clearances shall be maintained throughout the full range of movement of the bridge or any attachment thereto.

7 Where permitted by the bridge owner, supply cables may be run in rigid conduit attached directly to the bridge. Refer to WAC 296-44-350 through 296-44-49121 for installation rules.

(b) Guarding trolley-contact conductors located under bridges.

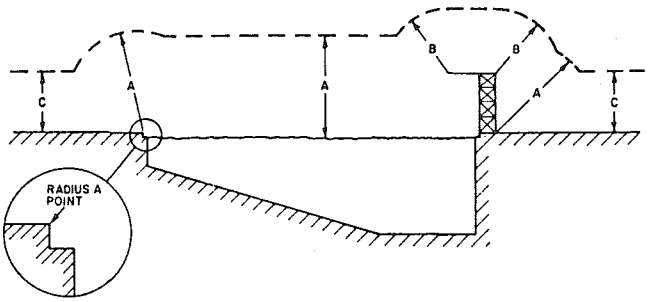
(i) Where guarding is required. Guarding is required where the trolley-contact conductor is located so that a trolley pole leaving the conductor can make simultaneous contact between it and the bridge structure.

(ii) Nature of guarding. Guarding shall consist of a substantial inverted trough of nonconducting material located above the contact conductor, or of other suitable means of preventing contact between the trolley support and the bridge structure.

(5) Minimum clearance of wires, conductors, or cables installed over or near swimming areas.

(a) Swimming pools. Where wires, conductors, or cables cross over a swimming pool or the surrounding area within twenty-five feet of the edge of the pool, the clearances in any direction shall be as shown in Fig. 212-8. The values of A, B, and C are specified in Table 212-9.

Fig. 212-8
Swimming Pool Clearances
(Re: Table 212-9)



Note 1: This rule does not apply to a pool fully enclosed by a solid or screened permanent structure.

Note 2: This rule does not apply to: Communication conductors and cables, guys and messengers, supply cables meeting WAC 296-44-21209 (3)(a), supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c); when these facilities are ten feet or more horizontally from the edge of the pool, diving platform, or diving tower.

(b) Beaches and waterways restricted to swimming. Where rescue poles are used by lifeguards at supervised swimming beaches, the required vertical and horizontal clearances shall be as specified in Table 212-9. Where rescue poles are not used, the minimum clearances shall be as specified in WAC 296-44-21230.

(c) Waterways subject to water skiing. The minimum vertical clearance shall be the same as that specified in WAC 296-44-21230.

Table 212-9. Clearance of Wires, Conductors, and Cables Passing Over or Near Swimming Areas

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definitions section for voltages of other systems.)

	Communication conductors and cables, guys, messengers, effectively grounded surge protection wires, neutral conductors meeting WAC 296-44-21209 (5)(a), supply cables meeting WAC 296-44-21209 (3)(a), and supply cables of 0 to 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply line conductors of 0 to 22 kV and supply cables over 750 V meeting WAC 296-44-21209 (3)(b) or (c) (ft)	Open supply line conductors
			22 to 50 kV (ft)
A: Clearance in any direction from the water level, edge of pool, base of diving platform, or anchored raft	18	25	25
B: Clearance in any direction to the diving platform or tower	14	16	16
C: Vertical clearance over adjacent land	Clearance shall be as required by WAC 296-44-21230.		

[1] A, B, and C are shown in Figure 212-8.

(6) Additional clearance. Greater clearances than the basic clearances specified in WAC 296-44-21253 (2), (3), (4) and (5) shall be provided where the conditions exceed the basic conditions specified in Rule 234A. All increases are cumulative.

(a) Voltages exceeding 50 kilovolts. The basic vertical and horizontal clearances specified in WAC 296-44-21253 (2), (3), (4) and (5) shall be increased at the following rates:

(i) For voltages between 50 and 470 kilovolts, the clearances specified in WAC 296-44-21253 (2), (3), (4) and (5) shall be increased at the rate of 0.4 inch per kilovolt in excess of 50 kilovolts. For voltages exceeding 470 kilovolts, the clearance shall be determined by the alternate method given by WAC 296-44-21253(7). All clearances for lines over 50 kilovolts shall be based on the maximum operating voltage.

Note: For voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground, clearances less than those required above are permitted for systems with known maximum switching surge factor (WAC 296-44-21253(7)).

(ii) The additional clearance for voltages in excess of 50 kilovolts specified in WAC 296-44-21253 (6)(a)(i) shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level.

(iii) For voltages exceeding 98 kilovolts alternating current to ground, or 139 kilovolts direct current to ground, either the clearances shall be increased or the electric field, or the effects thereof, shall be reduced by other means, as required, to limit the current due to electrostatic effects to 5.0 milliamperes, rms, if any ungrounded metal fence, building, sign, chimney, radio or television antenna, tank containing nonflammables or other installation, or any ungrounded metal attachments thereto where short-circuited to ground. For this determination, the conductor sag shall be at final unloaded sag at 120°F.

(b) Sag increase.

(i) No additional clearance is required for trolley and electrified railroad contact conductors.

(ii) No additional clearance is required where span lengths are less than those listed in WAC 296-44-21253 (1)(b)(ii) and the maximum conductor temperature for which the supply line is designed to operate is 120°F or less.

(iii) Where supply lines are designed to operate at or below a conductor temperature of 120°F and spans are longer than specified in WAC 296-44-21253 (1)(b)(ii) the minimum vertical clearance at midspan shall be increased by 0.1 foot for each ten feet in excess of span length over such limits. The maximum additional clearance need not exceed the arithmetic difference between final unloaded sag at a conductor temperature of 60°F, no wind, and final sag at the following conductor temperature and condition, whichever difference is greater, computed for the crossing span.

(A) 32°F, no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

Note: The additional clearances for ice loadings are not applicable to swimming pools (WAC 296-44-21253 (5)(a)).

(B) 120°F, no wind.

(iv) Where supply lines are designed to operate at conductor temperature above 120°F regardless of span length, the minimum vertical clearance at midspan specified in WAC 296-44-21253 (2), (3), (4), (5) and (6)(a) shall be increased by the difference between final unloaded sag at a conductor temperature of 60°F, no wind, and final sag at the following conductor temperature and condition, whichever difference is greater computed for the crossing span.

(A) 32°F, no wind, with radial thickness of ice, if any, specified in WAC 296-44-26309(2) for the loading district concerned.

Note: The additional clearances for ice loadings are not applicable to swimming pools (WAC 296-44-21253 (5)(a)).

(B) The maximum conductor temperature for which the supply line is designed to operate, with no horizontal displacement.

(v) Where minimum clearance is not at midspan, the additional clearances specified in WAC 296-44-21253 (6)(b)(iii) and (iv) may be reduced by multiplying by the following factors:

Distance from nearer support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
5	0.19
10	0.36
15	0.51

Distance from nearer support of crossing span to point of crossing in percentage of crossing span length	Factors[1]
20	0.64
25	0.75
30	0.84
35	0.91
40	0.96
45	0.99
50	1.00

[1] Interpolate for intermediate values.

In applying the above rules, the "point of crossing" is the location of any topographical feature which is the determinant of the clearance.

(7) Alternate clearances for voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground. The clearances specified in WAC 296-44-21253 (2), (3), (4), (5) and (6) may be reduced for circuits with known switching surge factors but shall not be less than the values computed by adding the reference distance to the electrical component of clearance.

(a) Sag conditions.

(i) Minimum vertical clearances shall be maintained under the following conductor temperatures and conditions:

(A) 32°F, no wind, with radial thickness of ice specified in WAC 296-44-26309(2) for the loading district concerned.

(B) 120°F, no wind.

(C) Maximum conductor temperature for which the line is designed to operate, if greater than 120°F.

(ii) Horizontal and diagonal clearances shall be maintained under the conditions specified in WAC 296-44-21253 (1)(a) and (c).

(b) Reference distances.

	Reference distance	Horizontal (ft)	Vertical (ft)
(i)	Buildings	5	9
(ii)	Signs, chimneys, radio and television antennas, tanks, and other installations not classified as bridges or buildings	5	9
(iii)	Superstructure of bridges [1 2]	5	9
(iv)	Supporting structures of another line	5	6
(v)	Dimension A of Figure 234-2	—	18
(vi)	Dimension B of Figure 234-2	14	14

[1] Where overtraveled ways on or near bridges, the clearances of WAC 296-44-21230 apply also.

[2] Where the bridge has moving parts, such as a lift bridge, the required clearances shall be maintained throughout the full range of movement of the bridge or any attachment thereto.

(c) Electrical component of clearance.

(i) The clearance computed by the following equation and listed in Table 212-10 shall be added to the reference distance specified in WAC 296-44-21253 (7)(b):

$$D = 3.28\left[\frac{V \cdot (PU) \cdot a}{500\,K}\right]^{1.667} bc \quad \text{(feet)}$$

where

V maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU maximum switching surge factor expressed in per-unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

c = margin of safety
1.2 for vertical clearances
1.0 for horizontal clearances

K = 1.15, the configuration factor for conductor-to-plane gap.

(ii) The value of D above shall be increased by three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(d) Limit. The clearances derived from WAC 296-44-21253 (7)(b) and (c) shall not be less than the basic clearances of WAC 296-44-21253(2), Tables 212-7 and 212-8, computed for 98 kilovolts alternating current rms to ground by WAC 296-44-21253 (6)(a).

Table 212-10. Electrical Component of Clearance to Buildings, Bridges, and Other Installations in WAC 296-44-21253 (7)(c)(iii)

(Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.)

Maximum operating voltage phase to phase (kV)	Switching surge factor (per unit)	Switching surge (kV)	Electrical component of clearances V (ft)	H (ft)
242	2.0	395	2.7	2.3
	2.2	435	3.2	2.7
	2.4	474	3.7	3.1
	2.6	514	4.2	3.5
	2.8	553	4.8	4.0
	3.0	593	5.4	4.5
362	1.8	532	4.5	3.7
	2.0	591	5.4	4.5
	2.2	650	6.3	5.2
	2.4	709	7.3	6.1
	2.6	768	8.3	6.9
	2.8	828	9.4	7.8
	3.0	887	10.6	8.8
550	1.6	719	7.5	6.2
	1.8	808	9.1	7.6
	2.0	898	10.8	9.0
	2.2	988	12.7	10.6
	2.4	1079	14.6	12.2
	2.6	1168	16.7	13.9
800	1.6	1045	13.9	11.6
	1.8	1176	16.9	14.1
	2.0	1306	20.1	16.7
	2.2	1437	23.6	19.7
	2.4	1568	27.3	22.7

(8) Clearance to rail cars. Where overhead wires, conductors, or cables run along railroad tracks, the minimum clearance in any direction shall be as shown in Figure 212-9. The values of V and H are defined as follows:

V minimum vertical clearance from the wire, conductor, or cable above the top of the rail as specified in WAC 296-44-21230 minus twenty feet the assumed height of the rail car;

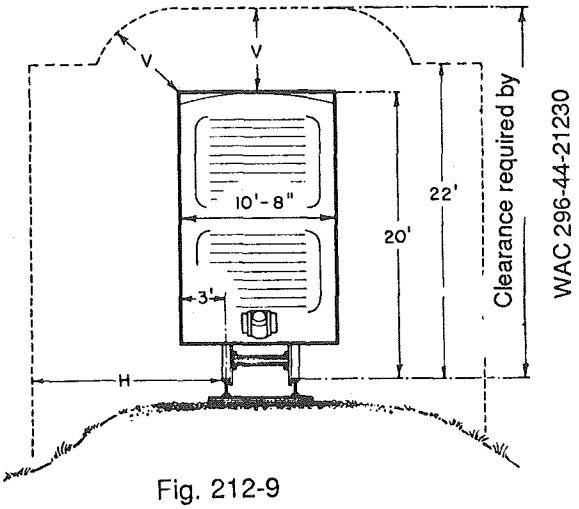


Fig. 212-9

Rail Car Clearances

H minimum horizontal clearance from the wire, conductor, or cable to the nearest rail, which is equal to the required vertical clearance above the rail minus fifteen feet as computed by the lesser of the following:
1. WAC 296-44-21230 (1) and (2)(a).
2. WAC 296-44-21230(4).

These clearances are computed for railroads handling standard rail cars as common carriers in interchange service with other railroads. Where wires, conductors, or cables run along mine, logging, and similar railways which handle only cars smaller than standard freight cars, the value of H may be reduced by one-half the difference between the width of a standard rail car (ten feet, eight inches) and the width of the narrower car.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21253, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-21265 Clearance for wires, conductors, or cables carried on the same supporting structure. (1) Application of rule.

(a) Multiconductor wires or cables. Cables, and duplex, triple, or paired conductors supported on insulators or messengers, meeting WAC 296-44-21209 (3) or (4) whether single or grouped, are for the purposes of this rule considered single conductors even though they may contain individual conductors not of the same phase or polarity.

(b) Conductors supported by messengers or span wires. Clearances between individual wires, conductors, or cables supported by the same messenger, or between any group and its supporting messenger, or between a trolley feeder, supply conductor, or communication conductor, and their respective supporting span wires, are not subject to the provisions of this rule.

(c) Line conductors of different phases on different circuits. Unless otherwise stated, the voltage between line conductors of different phases of different circuits

shall be the phasor difference of the voltages of both circuits or the line-to-ground voltage of the higher voltage circuit, whichever is greater.

(2) Horizontal clearance between line conductors.

(a) Fixed supports. Line conductors attached to fixed supports shall have horizontal clearances from each other not less than the larger value required by either WAC 296-44-21265 (2)(a)(i) or (ii) for the situation concerned.

Note 1: The pin spacing at buckarm construction may be reduced as specified in WAC 296-44-21273(6) to provide climbing space.

Note 2: Grades D and N need meet only the requirements of WAC 296-44-21265 (2)(a)(i).

Note 3: These clearances do not apply to cables meeting WAC 296-44-21209(3) or covered conductors of the same circuit meeting WAC 296-44-21209(4).

Note 4: For voltages to ground exceeding 98 kilovolts alternating current or 139 kilovolts direct current, clearances less than those required by (i) and (ii) below are permitted for systems with known maximum switching surge factors. (See WAC 296-44-21265 (2)(c).)

(i) Minimum horizontal clearance between line conductors of the same or different circuits. Clearances shall be not less than given in Table 212-11.

(ii) Clearance according to sags. The clearance at the supports of conductors of the same or different circuits of Grade B or C shall in no case be less than the values given by the following formulas, at a conductor temperature of 60°F, at final unloaded sag, no wind. All voltages are between the two conductors for which the clearance is being determined except for railway feeders which are to ground. The requirements of WAC 296-44-21265 (2)(a)(i) apply if they give a greater separation than this rule.

Note: No requirement is specified for clearance between conductors of the same circuit when rated above 50 kilovolts.

In the following, S is the apparent sag in inches of the conductor having the greater sag, and the clearance is in inches.

(A) For line conductors smaller than AWG No. 2: Clearance = 0.3 in per kilovolt + $7\sqrt{((S/3)-8)}$. (Table 212-12 shows selected values up to 46 kV.)

(B) For line conductors of AWG No. 2 or larger: Clearance = 0.3 in per kilovolt + $8\sqrt{(S/12)}$. (Table 212-13 shows selected values up to 46 kV.)

(C) For voltages exceeding 814 kilovolts, the clearance shall be determined by the alternate method given by WAC 296-44-21265 (2)(c).

Table 212-11. Minimum Horizontal Clearance at Supports Between Wires, Conductors, or Cables

(All voltages are between conductors involved except for railway feeders, which are to ground. The voltage between line conductors of different phases of different circuits shall be the phasor difference of the voltages of both circuits. If the two conductors of different circuits are of like phase, the lower voltage conductor shall be considered grounded for the purpose of determining the clearance between them.)

Class of circuit	Clearance (in)	Notes
Open communication conductors	6	Preferable minimum. Does not apply at conductor transposition points.
	3	Permitted where pin spacings less than 6 in have been in regular use. Does not apply at conductor transposition points.
Railway feeders:		Where 10 to 12 in clearance has already been established by practice, it may be continued, subject to the provisions of WAC 296-44-21265 (2)(a)(ii) for conductors having apparent sags not over 3 ft and for voltages not exceeding 8.7 kV.
0 to 750 V, AWG No 4/0 or larger	6	
0 to 750 V, smaller than AWG No 4/0	12	
750 V to 8.7 kV	12	
Supply conductors of the same circuit:		
0 to 8.7 kV	12	
8.7 to 50 kV	12 plus 0.4 per kV over 8.7 kV	
Above 50 kV	no value specified	
Supply conductors of different circuits:		For all voltages above 50 kV, the additional clearance shall be increased 3% for each 1000 ft in excess of 3300 ft above mean sea level. All clearances for voltages above 50 kV shall be based on the maximum operating voltage.
0 to 8.7 kV	12	
8.7 to 50 kV	12 plus 0.4 per kV over 8.7 kV	
50 to 814 kV	28.5 plus 0.4 per kV over 50 kV	

Table 212-12. Horizontal Clearances at Supports Between Line Conductors Smaller than AWG No. 2 Based on Sags

Sag (in)								But not less than[1]
Voltage between conductors (kV)	36	48	72	96	120	180	240	
	Horizontal clearance (in)							
2.4	14.7	20.5	28.7	35.0	40.3	51.2	60.1	12.0
4.16	15.3	21.1	29.3	35.6	40.9	51.8	60.7	12.0
12.47	17.7	23.5	31.7	38.0	43.3	54.2	63.1	13.5
13.2	18.0	23.8	32.0	38.3	43.6	54.5	63.4	13.8
13.8	18.1	23.9	32.1	38.4	43.7	54.6	63.5	14.0
14.4	18.3	24.1	32.3	38.6	43.9	54.8	63.7	14.3
24.94	21.5	27.3	35.5	41.8	47.1	58.0	66.9	18.5
34.5	24.4	30.2	38.4	44.7	50.0	60.9	69.8	22.4
46	27.8	33.6	41.8	48.1	53.4	64.3	73.2	26.9

[1] Clearance determined by Table 212-11, WAC 296-44-21265 (2)(a)(i).

Note: Clearance = 0.3 in/kV + $7\sqrt{((S/3)-8)}$, where S is the sag in inches.

Table 212-13. Horizontal Clearances at Supports Between Line Conductors AWG No. 2 or Larger Based on Sags

Sag (in) / Voltage between conductors (kV)	36	48	72	96	120	180	240	But not less than[1]
	Horizontal clearance (in)							
2	14.6	16.7	20.2	23.3	26.0	31.7	36.5	12.0
4.16	15.1	17.3	20.8	23.8	26.5	32.2	37.0	12.0
12.47	17.6	19.7	23.6	26.3	29.0	34.7	39.5	13.5
13.2	17.8	20.0	23.5	26.5	29.2	34.9	39.7	13.8
13.8	18.0	20.1	23.7	26.7	29.4	35.1	39.9	14.0
14.4	18.2	20.3	23.8	26.9	29.6	35.3	40.1	14.3
24.94	21.3	23.5	27.0	30.0	32.8	38.4	43.2	18.5
34.5	24.2	26.4	29.9	32.9	35.6	41.3	46.1	22.4
46	27.7	29.8	33.3	36.4	39.1	44.8	49.6	26.9

[1] Clearance determined by Table 212-11, WAC 296-44-21265 (2)(a)(i).

Note: Clearance = 0.3 in/kV + 8 $\sqrt{}$ (S/12), where S is the sag in inches.

(D) The clearance for voltages exceeding 50 kilovolts specified in WAC 296-44-21265 (2)(a)(ii)(A) and (B) shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level. All clearances for lines over 50 kilovolts shall be based on the maximum operating voltage.

(b) Suspension insulators. Where suspension insulators are used and are not restrained from movement, the clearance between conductors shall be increased so that one string of insulators may swing transversely throughout a range of insulator swing up to its maximum design swing angle without reducing the values given in WAC 296-44-21265 (2)(a). The maximum design swing angle shall be based on a six pound per square foot wind on the conductor at final sag at 60°F. This may be reduced to a four pound per square foot wind in areas sheltered by buildings, terrains, or other obstacles. The displacement of the wires, conductors, and cables shall include deflection of flexible structures and fittings, where such deflection would reduce the horizontal clearance between two wires, conductors, or cables.

(c) Alternate clearances for different circuits where one or both circuits exceed 98 kilovolts, alternating current, to ground or 139 kilovolts direct current to ground. The clearances specified in WAC 296-44-21265 (2)(a) and (b) may be reduced for circuits with known switching surge factors but shall not be less than the clearances derived from the following computations. For these computations, communication conductors and cables, guys, messengers, neutral conductors meeting WAC 296-44-21209 (5)(a), and supply cables, meeting WAC 296-44-21209 (3)(a) shall be considered line conductors at zero voltage.

(i) Clearance.

(A) The alternate basic clearance computed from the following equation and listed in Table 212-14 is the minimum electrical clearance between conductors of different circuits which shall be maintained under the expected loading conditions:

$$D = 3.28\left[\frac{V_{L-L} \cdot (PU) \cdot a}{500\,K}\right]^{1.667} b \quad \text{(feet)}$$

Table 212-14. Electrical Clearances in WAC 296-44-21265 (2)(c)(i)(A)
(Add three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.)

Maximum operating voltage phase to phase (kV)	Switching surge factor (per unit)	Switching surge (kV)	Electrical component of clearance (ft)
242	2.6 or less	890 or less	[1]6.3
	2.8	958	7.2
	3.0	1027	8.1
	3.2 or more	1095 or more	[2]8.8
362	1.8	893 or less	[1]6.4
	2.0	1024	8.0
	2.2	1126	9.5
	2.4	1228	10.9
	2.6	1330	12.5
	2.7 or more	1382 or more	[2]12.8
550	1.6	1245	11.2
	1.8	1399	13.6
	2.0	1555	16.2
	2.2	1711	19.0
	2.3	1789 or more	[2]19.1
800	1.6	1810	20.8
	1.8	2037	25.3
	1.9 or more	2149 or more	[2]27.4

[1] Limited by WAC 296-44-21265 (2)(c)(ii).
[2] Need not be greater than specified in WAC 296-44-21265 (2)(a) and (b).

where

V_{L-L} maximum alternating current crest operating voltage in kilovolts between phases of different circuits or maximum direct current operating voltage between poles of different circuits. If the phases are of the same phase and voltage magnitude one phase conductor shall be considered grounded;

PU maximum switching surge factor expressed in per-unit peak operating voltage between phases of different circuits and defined as a switching surge level between phases for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum

anticipated switching surge level generated by other means, whichever is greater;

a = 1.15, the allowance for three standard deviations;

b = 1.03, the allowance for nonstandard atmospheric conditions;

K = 1.4, the configuration factor for a conductor–to–conductor gap.

(B) The value of D shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(ii) Limit. The clearance derived from WAC 296–44–21265 (2)(c)(i) shall not be less than the basic clearances given in Table 212–11 computed for 169 kilovolts alternating current.

(3) Vertical clearance between line conductors. All line wires, conductors, and cables located at different levels on the same supporting structure shall have vertical clearances not less than the following.

(a) Basic clearance for conductors of same or different circuits. The clearances given in Table 212–15 shall apply to linewires, conductors, or cables of 0 to 50 kV attached to supports. No value is specified for clearances between conductors of the same circuit exceeding 50 kV.

Note 1: Line wires, conductors, or cables on vertical racks or separate brackets placed vertically and meeting the requirements of WAC 296–44–21265(7) may have spacings as specified in that rule.

Note 2: Where communication service drops cross under supply conductors on a common crossing structure, the clearance between the communication conductor and an effectively grounded supply conductor may be reduced to four inches provided the clearance between the communication conductor and supply conductors not effectively grounded meets the requirements of WAC 296–44–21265(3) as appropriate.

Note 3: Supply service drops of 0–750 V running above and parallel to communication service drops may have a minimum spacing of twelve inches at any point in the span including the point of and at their attachment to the building provided the nongrounded conductors are insulated and that a clearance of forty inches is maintained between the two services at the pole.

Note 4: This rule does not apply to conductors of the same circuit meeting WAC 296–44–21209(4).

(b) Additional clearances. Greater clearances than given in Table 212–15 (WAC 296–44–21265 (3)(a)) shall be provided under the following conditions. The increases are cumulative where more than one is applicable.

(i) Voltages exceeding 50 kilovolts.

(A) For voltages between 50 and 814 kilovolts, the clearance between conductors of different circuits shall be increased 0.4 inches per kilovolt in excess of 50 kV.

Note: For voltages to ground exceeding 98 kV alternating current or 139 kV direct current, clearances less than those required above are permitted for systems with known switching surge factors. (See WAC 296–44–21265 (3)(c).)

(B) The increase in clearance for voltages in excess of 50 kV specified in WAC 296–44–21265 (3)(b)(ii)(A) shall be increased three percent for each one thousand feet in excess of thirty–three hundred feet above mean sea level.

(C) All clearances for lines over 50 kV shall be based on the maximum operating voltage.

(D) No value is specified for clearances between conductors of the same circuit.

(ii) Conductors of different sags on same support.

(A) Line conductors, supported at different levels on the same structure shall have vertical clearances at the supporting structures so adjusted that the minimum clearance at any point in the span shall be not less than any of the following with the upper conductor at its final unloaded sag at the maximum temperature for which the conductor is designed to operate and the lower conductor at its final unloaded sag under the same ambient conditions and without electrical loading.

(I) For voltages less than 50 kilovolts between conductors, seventy–five percent of that required at the supports by Table 212–15.

(II) For voltages more than 50 kilovolts between conductors, the value specified in WAC 296–44–21265 (3)(b)(ii)(A)(I) increased in accordance with WAC 296–44–21265 (3)(b)(i).

(B) Sags should be readjusted when necessary to accomplish the foregoing, but not reduced sufficiently to conflict with the requirements of WAC 296–44–27821 (8)(b). In cases where conductors of different sizes are strung to the same sag for the sake of appearance or to maintain unreduced clearance throughout storms, the chosen sag should be such as will keep the smallest conductor involved in compliance with the sag requirements of WAC 296–44–27821 (8)(b).

(C) For span lengths in excess of one hundred fifty feet, vertical clearance at the structure between open supply conductors and communication cables or conductors shall be adjusted so that under conditions of conductor temperature of 60°F, no wind and final unloaded sag, no open supply conductor of 750 volts or less shall be lower in the span than a straight line joining the points of support of the highest communications cable or conductor, and no open supply conductor of over 750 volts but less than 50 kilovolts shall be lower in the span than thirty inches above such a straight line.

Note: Effectively grounded supply conductors associated with systems of 50 kilovolts or less need meet only the provisions of WAC 296–44–21265 (3)(b)(ii)(A).

(c) Alternate clearances for different circuits where one or both exceed 98 kilovolts, alternating current, or 139 kilovolts direct current to ground. The clearances specified in WAC 296–44–21265 (3)(a) and (b) may be reduced for circuits with known switching surge factors, but shall not be less than the crossing clearances required by WAC 296–44–21241 (3)(c).

Table 212-15. Minimum Vertical Clearance at Supports Between Line Conductors
(All voltages are between conductors.)

Conductors usually at lower levels	Open wires, 0 to 750 volts; cables, all voltages, having effectively grounded continuous metal sheath or messenger	Supply conductors; preferably at higher levels			
				15,000 to 50,000 volts	
		750 to 8,700 volts	8,700 to 15,000 volts	Same utility	Different utilities
Communication conductors:	Feet	Feet	Feet	Feet	Feet
General	[1] [2] 4	4	7	—	7
Used in operation of supply lines	2	3	4	7	7
Supply conductors:					
0 to 750 volts	2	[3] 3	[5] [6] 7	[5] 7	7
750 volts to 5,000 volts	—	[3] 2	[6] 7	7	7
5,000 volts to 8,700 volts	—	[3] 2	4	4	7
8,700 volts to 15,000 volts:					
If worked on alive with long-handled tools, and adjacent circuits are neither killed nor covered with shields or protectors	—	—	4	4	6
If not worked on alive except when adjacent circuits (either above or below) are killed or covered by shields or protectors, or by the use of long-handled tools not requiring linemen to go between live wires	—	—	2	[4] 4	[4] 4
Exceeding 15,000 volts, but not exceeding 50,000 volts	—	—	—	[4] 4	[4] 4

[1] Where supply circuits of 600 volts or less, with transmitted power of 5000 watts or less, are run below communication circuits in accordance with WAC 296-44-19409 (2)(b) the clearance may be reduced to two feet.

[2] In localities where the practice has been established of placing on jointly used poles, crossarms carrying supply circuits of less than 300 volts to ground and crossarms carrying communication circuits at a vertical separation less than specified in the table, such existing construction may be continued until the said poles are replaced provided that:
The minimum separation between existing crossarms is not less than two feet, and that:
Extensions to the existing construction shall conform to the clearance requirements specified in Table 212-15.
When communication conductors are all in cable, a supply crossarm carrying only wires of not more than 300 volts to ground may be placed at not less than two feet above the point of attachment of the cable to the pole provided that:
The nearest supply wire on such crossarm shall be at least thirty inches horizontally from the center of the pole, and that:
The cable be placed so as not otherwise to obstruct the climbing space.

[3] Where conductors are operated by different utilities, a minimum vertical spacing of four feet is required.

[4] These values do not apply to adjacent crossarms carrying phases of the same circuit or circuits.

[5] This value may be reduced to four feet where secondary vertical-rack construction is used on one side or face of pole, or on two sides where conductors are deadened, only. Service contacts are permitted in addition.

[6] A primary buckarm not less than eight feet long supporting not more than two conductors in the end pin positions or one lateral primary conductor dead-ended on the pole, may be placed in the seven foot spacing provided that this spacing is not reduced to less than five feet.

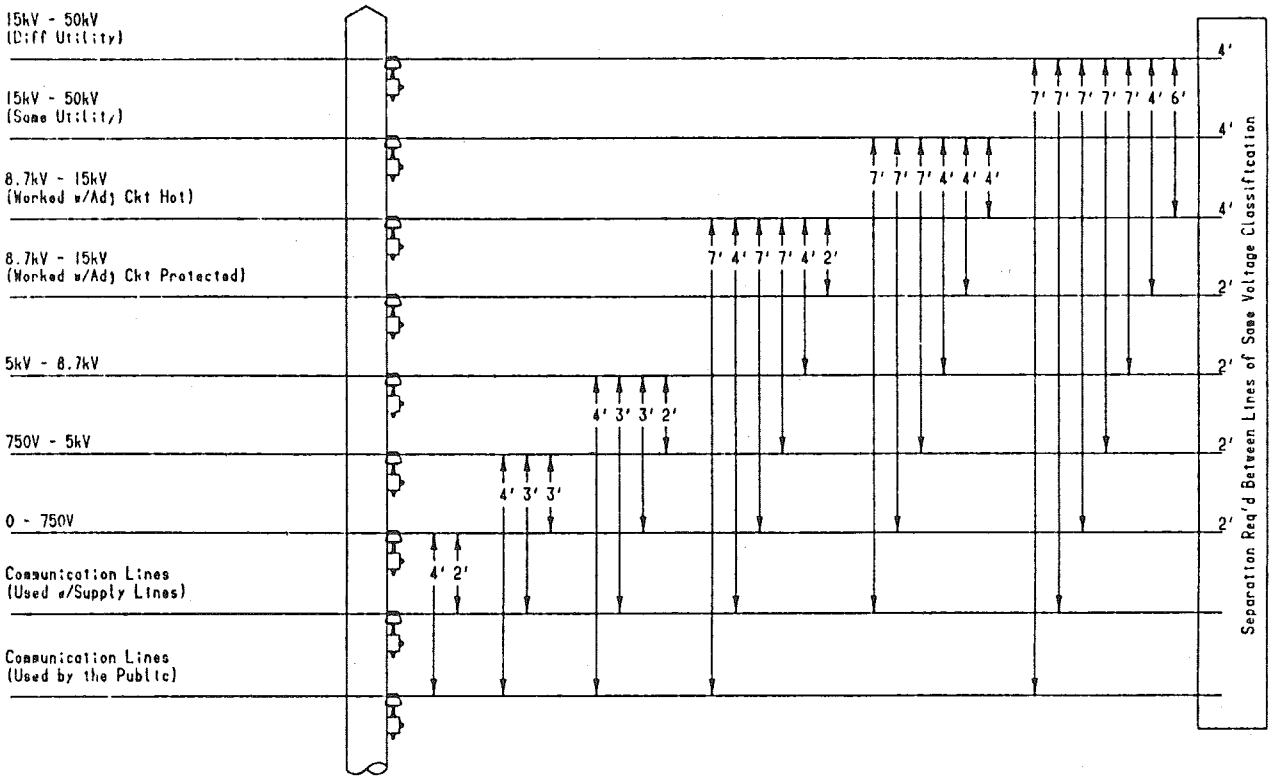


Fig 212-10
Minimum Vertical Clearance at Supports Between Line Conductors.
(Re: Table 212-15)

Fig. 212–10
Minimum Vertical Clearance at Supports Between Line Conductors

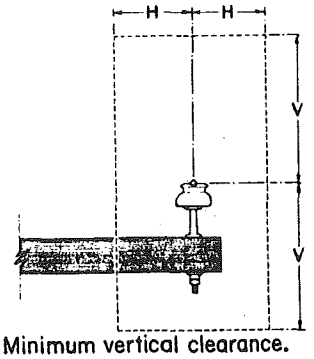
(4) Diagonal clearance between line wires, conductors, and cables located at different levels on the same supporting structure. No wire, conductor, or cable may be closer to any other wire, conductor, or cable than defined by the dashed line in Fig. 212–11, where V and H are determined in accordance with other parts of WAC 296–44–21265.

(5) Clearances in any direction from line conductors to supports, and to vertical or lateral conductors, span or guy wires attached to the same support.

(a) Fixed supports. Clearances shall not be less than given in Table 212–16.

Note: For voltages exceeding 98 kilovolts alternating current to ground or 139 kilovolts direct current to ground, clearances less than those required by Table 212–16 are permitted to systems with known switching surge factor. (See WAC 296–44–21265 (5)(c).)

(b) Suspension insulators. Where suspension insulators are used and are not restrained from movement, the clearance shall be increased so that the string of insulators may swing transversely throughout a range of insulator swing up to its maximum design swing angle without reducing the values given in WAC 296–44–21265 (5)(a). The maximum design swing angle shall be based on a six pound per square foot wind on the conductor at final sag at 60°F. This may be reduced to a four pound per square foot wind in areas sheltered by buildings, terrain, or other obstacles. The displacement of the wires, conductors, and cables shall include deflection of flexible structures and fittings, where such deflection would reduce the clearance.



V = Minimum vertical clearance.

H = Minimum horizontal clearance.

Clearance Diagram for Energized Conductor

Table 212–16. Minimum Clearance in Any Direction from Line Conductors to Supports and to Vertical or Lateral Conductors, Span, or Guy Wires Attached to the Same Support

	Communication lines		Supply lines		
			Circuit phase–to–phase voltage		
Clearance of line conductors from	In general (in)	On jointly used structures (in)	0 to 8.7 kV (in)	8.7 to 50 kV (in)	50 to 814 kV[4 9] (in)
Vertical and lateral conductors:					
Of the same circuit	3	3	3	3 plus 0.25 per kV over 8.7 kV	no value specified
Of other circuits	3	3	[5]6	6 plus 0.4 per kV over 8.7 kV	23 plus 0.4 per kV over 50 kV
Span or guy wires,[11] or messengers attached to same structure:					
When parallel to line	[7]3	[1 7]6	[1]12	12 plus 0.4 per kV over 8.7 kV	29 plus 0.4 per kV over 50 kV
Anchor guys	[7]3	[1 7]6	[1]6	6 plus 0.25 per kV over 8.7 kV	16 plus 0.25 per kV over 50 kV
All other	[7]3	[1 7]6	6	6 plus 0.4 per kV over 8.7 kV	23 plus 0.4 per kV over 50 kV
Surface of support arms	[2]3	[2]3	[6 8]3	3 plus 0.2 per kV over 8.7 kV[6 8 10]	11 plus 0.2 per kV over 50 kV
Surface of structures:					
On jointly used structures	—	[2]5	[3 6 8]5	5 plus 0.2 per kV over 8.7 kV[6 8]	13 plus 0.2 per kV over 50 kV
All other	[2]3	—	[6 8]3	3 plus 0.2 per kV over 8.7 kV[6 8]	11 plus 0.2 per kV over 50 kV

[1] For guy wires, if practical. For clearances between span wires and communication conductors, see WAC 296-44-21287(3).
On jointly used structures, guys which pass within twelve inches of supply conductors, and also pass within twelve inches of communication cables, shall be protected with a suitable insulating covering where the guy passes the supply conductors, unless the guy is effectively grounded or insulated with a strain insulator at a point below the lowest supply conductor and above the highest communication cable.
The minimum clearance from an insulated or effectively grounded guy to a communication cable may be reduced to three inches when abrasion protection is provided on the guy or communication cable.

[2] Communication conductors may be attached to supports on the sides or bottom of crossarms or surfaces of poles with less clearances.

[3] This clearance applies only to supply conductors at the support below communication conductors, on jointly used structures.
Where supply conductors are above communication conductors, this clearance may be reduced to three inches except for supply conductors of 0 to 750 V whose clearance may be reduced to one inch.

[4] All clearances for line over 50 kV shall be based on the maximum operating voltage. For voltages exceeding 814 kV, the clearance shall be determined by the alternate method given by WAC 296-44-21265 (5)(c).

[5] For supply circuits of 0 to 750 V, this clearance may be reduced to three inches.

[6] A neutral conductor meeting WAC 296-44-21209 (5)(a) may be attached directly to the structure surface.

[7] Guys and messengers may be attached to the same strain plates or to the same through bolts.

[8] For open supply circuits of 0 to 750 V and supply cables of all voltages meeting WAC 296-44-21209 (3)(a), (b) or (c), this clearance may be reduced to one inch.

[9] The additional clearance for voltages in excess of 50 kV specified in Table 212-16 shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level.

[10] Where circuit is effectively grounded and neutral conductor meets WAC 296-44-21209 (5)(a), phase-to-neutral voltage shall be used to determine clearance from phase conductor to surface of support arms.

[11] These clearances may be reduced by not more than twenty-five percent to a guy insulator, provided that full clearance is maintained to its metallic end fittings and the guy wires. The clearance to an insulated section of a guy between two insulators may be reduced by not more than twenty-five percent provided that full clearance is maintained to the uninsulated portion of the guy.

(c) Alternate clearances for voltages exceeding 98 kV alternating current to ground or 139 kV direct current to ground. The clearances specified in WAC 296-44-21265 (5)(a) and (b) may be reduced for circuits with known switching surge factors but shall not be less than the following.

(i) Alternate clearances to anchor guys, and vertical or lateral conductors. The alternate clearances shall not be less than the crossing clearances required by WAC 296-44-21241 (2)(b) and (3)(c) for the conductor voltages concerned. For the purpose of this rule, anchor guys shall be assumed to be at ground potential.

(ii) Alternate clearance to surface of support arms and structures.

(A) Alternate clearance.

(I) Basic computation. The alternate clearance computed from the following equation is the minimum electrical clearance which shall be maintained under the expected loading conditions. For convenience, clearances for typical system voltages are shown in Table 212-17.

$$D = 39.37 \left[\frac{V \cdot (PU) \cdot a}{500\,K}\right]^{1.667} b \quad \text{(in)}$$

where

V maximum alternating current crest operating voltage to ground or maximum direct current operating voltage to ground in kilovolts;

PU maximum switching surge factor expressed in per-unit peak voltage to ground and defined as a switching surge level for circuit breakers corresponding to ninety-eight percent probability that the maximum switching surge generated per breaker operation does not exceed this surge level, or the maximum anticipated switching surge level generated by other means, whichever is greater;

a =1.15, the allowance for three standard deviations with fixed insulator supports;

a =1.05, the allowance for one standard deviation with free swinging insulators;

b =1.03, the allowance for nonstandard atmospheric conditions;

K =1.2, the configuration factor for conductor-to-tower window.

(II) Atmospheric correction. The value of D shall be increased three percent for each one thousand feet in excess of fifteen hundred feet above mean sea level.

(B) Limits. The alternate clearance shall not be less than the clearance of Table 212-16 for 169 kV alternating current. The alternate clearance shall be checked for adequacy of clearance to workmen and increased, if necessary, where work is to be done on the structure while the circuit is energized. (Also see chapter 296-45 WAC.)

(6) Clearance between supply circuits of different voltage classifications on the same support arm. Supply circuits of any one voltage classification as given in Table 212-15 may be maintained on the same support arm with supply circuits of the next consecutive voltage classification only under one or more of the following conditions:

(a) If they occupy positions on opposite sides of the structure.

Table 212-17. Minimum Clearance in Any Direction from Line Conductors to Supports

Maximum operating voltage phase to phase (kV)	Switching surge factor (per unit)	Switching surge (kV)	Minimum clearance to supports: Fixed (in)	Minimum clearance to supports: Free swinging at maximum angle (in)
242	2.4	474	[1]35	[1]35
	2.6	514	40	[1]35
	2.8	553	45	38
	3.0	593	[2]50	43
	3.2	632	[2]50	48
362	1.6	473	[1]35	[1]35
	1.8	532	42	36
	2.0	591	50	48
	2.2	650	59	51
	2.4	709	68	59
	2.5	739	[2]73	63
550	1.6	719	70	60
	1.8	808	85	73
	2.0	898	101	87
	2.2	988	[2]111	101
800	1.6	1045	130	111
	1.8	1176	158	135
	1.9	1241	[2]161	148
	2.0	1306	[2]161	[2]161

[1] Limited by WAC 296-44-21265 (5)(c)(iii)(B).
[2] Need not be greater than specified in WAC 296-44-21265 (5)(a) and (b).

(b) If in bridge-arm or sidearm construction, the clearance is not less than the climbing space required for the higher voltage concerned and provided for in WAC 296-44-21273.

(c) If the higher voltage conductors occupy the outer positions and the lower voltage conductors occupy the inner positions.

(d) If series lighting or similar supply circuits are ordinarily dead during periods of work on or above the support arm concerned.

(e) If the two circuits concerned are communication circuits used in the operation of supply lines, and supply circuits of less than 8.7 kilovolts, and are owned by the same utility, provided they are installed as specified in WAC 296-44-21265 (6)(a) or (b).

(7) Conductor spacing: Vertical racks. Conductors or cables may be carried on vertical racks or separate brackets other than wood placed vertically on one side of the structure and securely attached thereto with less clearance between the wires, conductors, or cables than specified in WAC 296-44-21265(3) if all the following conditions are met:

(a) The voltage shall not be more than 750 volts, except supply cables and conductors meeting WAC 296-44-21209 (3)(a) or (b) which may carry any voltage.

(b) Conductors shall be of the same material or materials, except that different materials may be used if their sag-tension characteristics and arrangement are such that the spacing specified in WAC 296-44-21265 (7)(c) is maintained under all service conditions.

(c) Vertical spacing between conductors shall be not less than the following:

Span length (ft)	Vertical spacing between conductors (in)
0 to 150	4
150 to 200	6
200 to 250	8
250 to 300	12

Note: The vertical spacing may be reduced where the conductors are held apart by intermediate spacers, but may not be less than four inches.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21265, filed 7/25/86.]

WAC 296-44-21273 Climbing space. (1) Location and dimensions.

(a) A climbing space having the horizontal dimensions specified in subsection (5) of this section shall be provided past any conductors, crossarms, or other parts.

(b) The climbing space shall be provided on all poles and structures.

(c) The climbing space shall extend vertically past any conductor or other part between levels above and below the conductor as specified in subsections (5), (6), (7), and (8) of this section. The position of the climbing space shall be maintained for at least forty inches above and below any limiting conductor level and where the limiting conductor levels are separated six feet or more, the climbing space may be rotated by not more than one-fourth of the distance around the pole between any such levels. Where the climbing space is on the face or back of the pole, this space may be considered as in either quadrant to the right or left for the purpose of interpreting this rule.

(d) The climbing space shall include not less than one quadrant nor more than one-half of the pole cross-section.

(2) Portions of supporting structures in climbing space. Portions of the pole or structure when included in one side or corner of the climbing space, are not considered to obstruct the climbing space, providing that such inclusion into the climbing space does not exceed twenty-five percent of the total area of the specified climbing space. Where such a condition exists, additional space shall be added to the original spacing to compensate for the loss of clearances.

(3) Crossarm location relative to climbing space. All single crossarms should be located on the same face and side of the pole to avoid unnecessarily obstructing the climbing space through the different conductor levels. One arm of sets of double crossarms protruding into the climbing space shall not be considered as an obstruction in the climbing space.

(4) Location of supply and communication apparatus relative to climbing space. Transformers, regulators,

lightening arresters, fuse mountings, switches, service brackets, communication terminal cans, and service drop hooks and other attachments shall be mounted outside the climbing space. Pole steps shall be placed so that they do not interfere with the climbing space.

(5) Climbing space through conductors on crossarms.

(a) Conductors of same voltage classification on same crossarm. Climbing space between conductors shall be of the horizontal dimensions specified in Table 212–18 of this section, and shall be provided both along and across the line, and shall be projected vertically not less than forty inches above and below the limiting conductors. Where communication conductors are above supply conductors of more than 8,700 volts, the climbing space shall be projected vertically at least sixty inches above the highest supply conductor.

Note: This rule does not apply if it is the unvarying practice of the employers concerned to prohibit employees from ascending beyond the conductors of the given line, unless the line is killed.

(b) Conductors of different voltage classifications on same crossarm. The climbing space shall be that required by Table 212–18 of this section for the highest voltage of any conductor bounding the climbing space. The climbing space shall extend vertically to the limits specified in (a) of this subsection, and the exception thereto.

(6) Climbing space on buckarm construction. The full width of climbing space shall be maintained on buckarm construction and shall extend vertically in the same position at least forty inches (or sixty inches where required by subsection (5)(a)) above and below any limiting conductor.

Method of providing climbing space on buckarm construction. With circuits of less than 5,000 volts and span lengths not exceeding one hundred fifty feet and sags not exceeding fifteen inches for wires of No. 2 and larger sizes, or thirty inches for wires smaller than No. 2, a six–pin crossarm having pin spacing of fourteen and one–half inches may be used to provide a thirty–inch climbing space on one corner of a junction pole by omitting the pole pins on all arms, and inserting pins midway between the remaining pins so as to give a spacing of seven and one–fourth inches, provided that each conductor on the end of every arm is tied to the same side of its insulator, and that the spacing on the next pole is not less than fourteen and one–half inches.

(7) Climbing space past vertical conductors. One vertical run or riser encased in suitable conduit or other protective covering not over two inches outside diameter and securely attached to the surface of the pole or structure and/or a ground wire attached to the surface of the pole, are allowed in the climbing space. It is recommended that this practice be avoided whenever practical.

(8) Climbing space near ridge–pin conductors. The climbing space specified in Table 212–18 shall be provided above the top crossarm to the ridge–pin conductor but need not be carried past it.

Table 212–18. Minimum Horizontal Clearance Between Conductors Bounding the Climbing Space
(All voltages are between the two conductors bounding the climbing space except for communications conductors which are voltage to ground. Where the two conductors are in different circuits, the voltage between conductors shall be the arithmetic sum of the voltages of each conductor to ground for a grounded circuit or phase to phase for an ungrounded circuit.)

		Horizontal clearance between conductors bounding the climbing space			
		On structures used solely by		On jointly used structures	
Character of conductors adjacent to climbing space	Voltage of conductors	Communication conductors	Supply conductors	Supply conductors above communication conductors	Communication conductors above supply conductors[1]
		(in)	(in)	(in)	(in)
Communication conductors	0 to 150 V	no requirements	—	[2]	no requirements
	exceeding 150 V	24 recommended	—	[2]	24 recommended
Supply cables meeting WAC 296–44–21209 (3)(a)	all voltages		—	[2]	no requirements
Supply cables meeting WAC 296–44–21209 (3)(b) or (c)	all voltages	—	24	24	30
Open supply line conductors and supply cables meeting WAC 296–44–21209(4)	0 to 300 V	—	24	24	30
	300 V to 8.7 kV	—	30	30	30
	8.7 kV to 28 kV	—	36	36	36
	28 kV to 38 kV	—	40	40	
	38 kV to 50 kV	—	46	46	
	50 kV to 73 kV	—	54	54	
	exceeding 73 kV	—	54		

[1] This relation of levels is not, in general, desirable and should be avoided.

[2] Climbing space shall be the same as required for the supply conductors immediately above, with a maximum of thirty inches except that a climbing space of sixteen inches across the line may be employed for communication cables or conductors where the only supply conductors at a higher level are secondaries (0 to 750 V) supplying airport or airway marker lights or crossing over the communication line and attached to the pole top or to a pole top extension fixture.

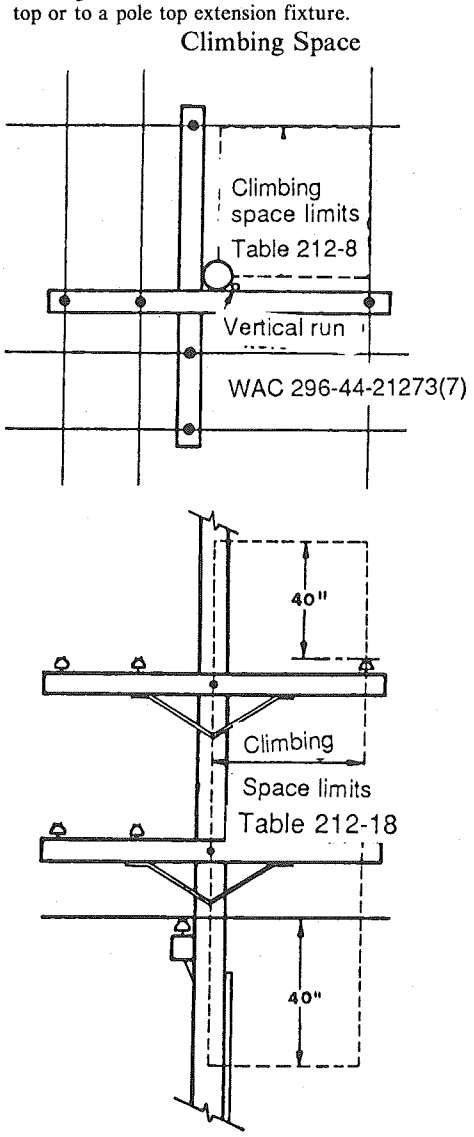


Fig. 212-12

Climbing Space

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21273, filed 7/25/86.]

WAC 296-44-21279 Working space. (1) Location of working spaces. Working spaces shall be provided on the climbing face of the structure at each side of the climbing space.

(2) Dimensions of working spaces.

(a) Along the support arm. The working space shall extend from the climbing space to the outmost conductor position on the support arm.

(b) At right angles to the support arm. The working space shall have the same dimension as the climbing space (see WAC 296-44-21273(5)). This dimension shall be measured horizontally from the face of the support arm.

(c) Vertically. The working space shall have a height not less than that required by WAC 296-44-21265 for the vertical separation of line conductors carried at different levels on the same support.

(3) Location of vertical and lateral conductors relative to working spaces. The working spaces shall not be obstructed by vertical or lateral conductors. Such conductors shall be located on the opposite side of the pole from the climbing side or on the climbing side of the pole at a distance from the support arm at least as great as the width of climbing space required for the highest voltage conductors concerned. Vertical conductors enclosed in suitable conduit may be attached on the climbing side of the structure, in compliance with WAC 296-44-21273(7).

(4) Location of buckarms relative to working spaces. Buckarms may be used under any of the following conditions, provided the climbing space is maintained. Climbing space may be obtained as in WAC 296-44-21273(6).

(a) Standard height of working space. Lateral working space of the height required by Table 212-15 shall be provided between the lateral conductors attached to the buckarm and the line conductors. This may be accomplished by increasing the spacing between the line support arms as shown in Figure 212-14.

(b) Reduced height of working space. Buckarms may be inserted at reduced spacing when the conductors on the buckarms are attached to conductors on one adjacent linearm as follows: Where wires are of 0 to 750 volts spacing may be reduced to twelve inches; where wires are of 750 to 15,000 volts spacing may be reduced to eighteen inches.

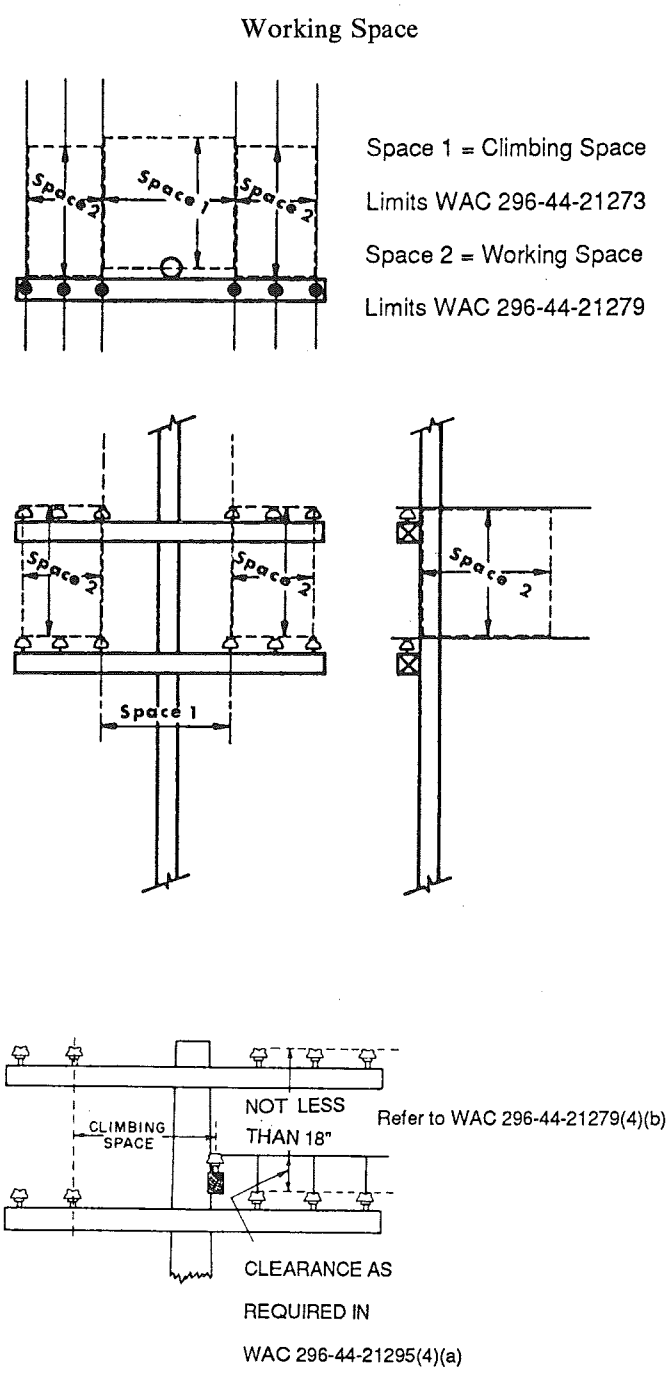


Fig. 212-14

Obstruction of working Space by Buckarm

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21279, filed 7/25/86.]

WAC 296-44-21287 Vertical clearance between certain communication and supply facilities located on the same structure. (1) Equipment. For the purpose of measuring clearances under this rule, "equipment" shall be taken to mean noncurrent-carrying metal parts of equipment, including metal supports for cables or conductors, and metal support braces which are attached to metal supports or are less than one inch from transformer cases or hangers which are not effectively grounded.

(2) Clearances in general. Vertical clearances between supply conductors and communication equipment, between communication conductors and supply equipment, and between supply and communication equipment shall be as specified in Table 212-19 except as provided in WAC 296-44-21287(3).

Table 212-19. Vertical Clearances Between Supply Conductors and Communication Equipment, Between Communication Conductors and Supply Equipment, and Between Supply and Communication Equipment

(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Supply voltage (kV)	Vertical clearance (in)
0 to 8.7	[1]40
8.7 to 50	[1]60
over 50	60 plus 0.4 per kV over 50 kV

[1] Where noncurrent carrying parts of equipment are effectively grounded consistently throughout well-defined areas and where communication is at lower levels, clearances may be reduced to thirty inches.

(3) Clearances for span wires or brackets. Span wires or brackets carrying luminaires or trolley conductors shall have at least the vertical clearances in inches from communication equipment set forth in Table 212-20.

(4) Clearance from drip loops of luminaire brackets. If a drip loop of conductors entering a luminaire bracket from the surface of the structure is above a communication cable, the lowest point of the loop shall be at least twelve inches above communication cable or through bolt.

Note: The above clearance may be reduced to three inches if the loop is covered by a suitable nonmetallic covering which extends at least two inches beyond the loop.

Table 212-20. Vertical Clearance of Span Wires and Brackets from Communications Lines

	Carrying luminaires		Carrying trolley conductors	
	Not effectively grounded (inches)	Effectively grounded (inches)	Not effectively grounded (inches)	Effectively grounded (inches)
Above communication support arms	[1]20	[1]20	[1]20	[1]20
Below communication support arms	[3]40	24	24	24

	Carrying luminaires		Carrying trolley conductors	
	Not effectively grounded (inches)	Effectively grounded (inches)	Not effectively grounded (inches)	Effectively grounded (inches)
Above messengers carrying communication cables	[1]20	4	12	4
Below messengers carrying communication cables	[4]40	4	12	4
From terminal box of communication cables	[1]20	4	[2]12	4
From communication brackets, bridle wire rings, or drive hooks	[1]16	4	4	4

[1] This may be reduced to twelve inches for either span wires or metal parts of brackets at points forty inches or more from the structure surface.

[2] Where it is not practical to obtain a clearance of one foot from terminal boxes of communication cables, all metal parts of terminals shall have the greatest possible separation from fixtures or span wires including all supporting screws and bolts of both attachments.

[3] This may be reduced to twenty-four inches for luminaires operating at less than 150 V to ground.

[4] This may be reduced to twenty inches for luminaires operating at less than 150 volts to ground.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21287, filed 7/25/86.]

WAC 296-44-21295 Clearances of vertical and lateral conductors from other wires and surfaces on the same support. Vertical and lateral conductors shall have the clearances and separations required by this rule from other conductors, wires, or surfaces on the same support.

Note 1: This rule does not prohibit the placing of supply circuits of the same or next voltage classification in the same duct, if each circuit or set of wires is enclosed in a metal sheath.

Note 2: This rule does not prohibit the placing of paired communication conductors in rings attached directly to the structure or to messenger.

Note 3: This rule does not prohibit placing grounding conductors, neutral conductors meeting WAC 296-44-21209 (5)(a), supply cables meeting WAC 296-44-21209 (3)(a), or conductors physically protected by enclosing in conduit, directly on the support.

Note 4: This rule does not prohibit placing properly insulated supply circuits of 600 volts or less and not exceeding 5000 watts in the same cable with control circuits with which they are associated.

(1) Location of vertical or lateral conductors relative to climbing spaces, working spaces, and pole steps. Vertical or lateral conductors shall be located so that they do not obstruct climbing spaces, or lateral working spaces between line conductors at different levels, or interfere with the safe use of pole steps.

Note: This rule does not apply to portions of the structure which workers do not ascend while the conductors in question are alive.

(2) Conductors not in conduit. Conductors not encased in conduit shall have the same clearances from conduits as from other surfaces of structures.

(3) Mechanical protection near ground. Where within eight feet of the ground, all vertical conductors, cables, and grounding wires shall be protected by a covering which gives suitable mechanical protection. For grounding wires from surge arresters, the protective covering just specified shall be of wood molding or of other nonmetallic material giving equivalent mechanical protection.

Note 1: This covering may be omitted from armored cables or cables installed in a grounded metal conduit.

Note 2: This covering may be omitted from lead-sheathed cables used in rural districts.

Note 3: This covering may be omitted from vertical runs of communication cables or conductors.

Note 4: This covering may be omitted from grounding wires used in rural districts or in any area where the grounding wire is one of a number of grounding wires used to provide multiple grounds.

Note 5: This covering may be omitted from wires which are used solely to protect poles from lightning.

(4) Requirements for vertical and lateral supply conductors on supply line structures or within supply space on jointly used structures.

(a) General clearances. In general, clearances shall be not less than the values specified in Table 212-21 or WAC 296-44-21265(5).

(b) Special cases. The following requirements apply only to portions of a structure which workers ascend while the conductors in question are alive.

(i) Sidearm construction. Vertical conductors in cables meeting WAC 296-44-21209 (3)(a) and grounding wires may be run without insulating protection from supply line conductors on structures used only for supply lines and employing sidearm construction on the side of the structure opposite to the line conductors if climbing space is provided on the line-conductor side of the structure.

(ii) Conductors to luminaires. On structures used only for supply lines, open wires may be run from the supply line arm directly to the head of a luminaire, provided the clearances of Table 212-21 are obtained and the open wires are substantially supported at both ends.

(iii) Conductors of less than 300 volts. Vertical or lateral secondary supply conductors of not more than 300 volts to ground may be run in multiple-conductor cable attached directly to the structure surface or to support arms in such a manner as to avoid abrasion at the point of attachment. Each conductor of such cable which is not effectively grounded, or the entire cable assembly, shall have an insulating covering required for a conductor of at least 600 volts.

(iv) Other conditions. If open wire conductors are within four feet of the pole, vertical conductors shall be run in one of the following ways.

Table 212-21. Clearance of Vertical and Lateral Conductors
(Circuit Phase-to-Phase Voltage)

Clearance of vertical and lateral conductors	0 to 8.7 kV (inches)	8.7 to 50 kV (inches)	Over 50 kV[4] (inches)
From surfaces of supports	[1] [2]3	3 plus 0.2 per kV over 8.7 kV	11 plus 0.2 per kV over 50 kV
From span, guy, and messenger wires	[5]6	6 plus 0.4 per kV over 8.7 kV[3]	23 plus 0.4 per kV over 50 kV[3]

1 A neutral conductor meeting WAC 296-44-21209 (5)(a) may be attached directly to the structure surface.
2 For supply circuits of 0 to 750 V this clearance may be reduced to one inch.
3 Multiplier may be reduced to 0.25 inch/kV for anchor guys.
4 The additional clearance for voltages in excess of 50 kV specified in Table 212-21, shall be increased three percent for each one thousand feet in excess of thirty-three hundred feet above mean sea level.
5 For cables meeting WAC 296-44-21209 (3)(c) and operating at 0 to 750 V, this may be reduced to two inches.

Table 212-22. Clearances Between Open Vertical Conductors and Pole Center
(Voltages are phase to ground for effectively grounded circuits and those other circuits where all ground faults are cleared by promptly deenergizing the faulted section, both initially and following subsequent breaker operations. See the definition section for voltages of other systems.)

Voltage (kV)	Distance above and below open supply conductors where clearances apply (feet)	Minimum clearance between vertical conductor and pole center (inches)
0 to 8.7	4	15
8.7 to 16	6	20
16 to 22	6	23
22 to 30	6	26
30 to 50	6	34

(A) Open vertical conductors shall have the clearances given in Table 212-22 within the zone specified in the table.

(B) Within the zone above and below open supply conductor as given in Table 212-22 vertical and lateral conductors may be enclosed in nonmetallic conduit, or in cable protected by an insulating covering and may be run on the pole surface.

(C) Supply grounding conductors may be run on the pole surface without molding except as required by WAC 296-44-21295(3) for mechanical protection near the ground.

(5) Requirements for vertical and lateral communications conductors on communication line structures or within the communication space on jointly used structures.

(a) Clearances from wires. The clearances of uninsulated vertical and lateral conductors from other conductors (except those in the same ring run) and from guy, span, or messenger wires shall be three inches.

(b) Clearances from supporting structure surfaces. Vertical and lateral insulated communication conductors may be attached directly to a structure. They shall have a vertical clearance of at least forty inches from any supply conductors (other than vertical runs or luminaire leads) of 8.7 kilovolts or less, or sixty inches if more than 8.7 kilovolts.

Note: These clearances do not apply where the supply circuits involved are those carried in the manner specified in WAC 296-44-19409 (2)(b).

(6) Requirements for vertical supply conductors passing through communication space on jointly used line structures.

(a) Grounded metal-sheathed cables. Grounded metal-sheathed cables may be fastened directly to the surface of the line structure. Such cables shall be protected with suitable nonmetallic covering when the line structure also carries trolley attachments or when an ungrounded luminaire is attached below the communication cable. The grounded metal-sheathed cable shall be protected with a nonmetallic covering for a distance of forty inches above the highest communication wire and six feet below the lowest trolley attachment or ungrounded luminaire fixture.

(b) Jacketed multiple-conductor cables. Jacketed multiple-conductor cables operating at voltages not exceeding 300 volts to ground may be attached directly to the surface of the line structure. Each conductor shall be insulated for a potential of at least 600 volts. Where used as aerial services, the point where such cables leave the structure shall be at least forty inches above the highest or forty inches below the lowest communication attachment. All splices and connections in the cable shall be insulated. No additional protection is required.

(c) Grounded metal covering. Conductors of all voltages may be run in effectively grounded metal covering. Such metal covering shall be protected with a nonmetallic covering under the same conditions and to the same extent as required for grounded metal-sheathed cables in WAC 296-44-21295 (6)(a).

(d) Suspended from supply support arm. Lamp leads of lighting circuits may be run from supply support arms directly to a bracket or luminaire under the following conditions:

(i) The vertical run shall consist of paired wires or multiple-conductor cable securely attached at both ends to suitable brackets and insulators.

(ii) The vertical run shall be held taut at least forty inches from the surface of the pole through the communication space at least twelve inches beyond the end of any communication support arm by which it passes, and at least six inches from communication drop wires, and at least twenty inches from any communication cable.

(iii) Insulators attached to luminaire brackets for supporting the vertical run shall be capable of meeting, in the position in which they are installed, the same flashover requirements as the luminaire insulators.

(iv) Each conductor of the vertical run shall be AWG No. 10 or larger.

(e) Supply grounding conductors.

(i) Supply grounding conductors may be run bare where there are no trolley attachments or ungrounded street lighting fixtures, or both, located below the communication attachment provided:

(A) The grounding conductor is directly (metallically) connected to a conductor which forms part of an effective grounding system; and

(B) The grounding conductor has no connection to supply equipment between the grounding electrode and the effectively grounded conductor unless the supply equipment has additional connections to the effectively grounded conductor.

(ii) Supply grounding conductors not conforming to WAC 296-44-21295 (6)(e)(i) shall be protected with a suitable nonmetallic covering to the same extent as required for grounded metal-sheathed cables in WAC 296-44-21295 (6)(a).

(f) Clearance from through bolts. Vertical runs of supply conductors or cables shall have a clearance of not less than two inches from exposed through bolts and other exposed metal objects attached thereto which are associated with communication line equipment.

Note: Vertical runs of effectively grounded supply conductors may have a clearance of one inch from the end of exposed communication through bolts.

(g) Multiple conductor cables. Multiple conductor cables operating at voltages not exceeding 600 V between conductors may be attached directly to the surface of the line structure if protected by nonmetallic covering. Each conductor shall be insulated for a potential of at least 600 V. Where used as aerial services, the point where such cables leave the structure shall be at least forty inches above the highest or forty inches below the lowest communications attachment. All splices and connections in the cable shall be insulated.

(7) Requirements for vertical communication conductors passing through supply space on jointly used structures. All vertical runs of communication conductors passing through supply space shall be installed as follows.

(a) Metal-sheathed communication cables. Vertical runs of metal-sheath communication cables shall be covered with wood molding, or other suitable nonmetallic material, where they pass trolley feeders or other supply line conductors. This nonmetallic covering shall extend from a point forty inches above the highest trolley feeders, or other supply conductors, to a point six feet below the lowest trolley feeders or other supply conductors, but need not extend below the top of any mechanical protection which may be provided near the ground.

Note: Communication cables may be run vertically on the pole through space occupied by railroad signal supply circuits in the lower position, as permitted in WAC 296-44-19409 (2)(b), without nonmetallic covering within the supply space.

(b) Communication conductors. Vertical runs of insulated communication conductors shall be covered with wood molding, or other suitable nonmetallic material, to the extent required for metal-sheathed communication cables in WAC 296-44-21295 (7)(a) where such conductors pass trolley feeders or other supply conductors.

Note: Communication conductors may be run vertically on the structure through space occupied by railroad-signal supply circuits in the lower position, as permitted in WAC 296-44-19409 (2)(b), without nonmetallic covering within the supply space.

(c) Communication grounding conductors. Vertical communication grounding conductors shall be covered with wood molding or other nonmetallic material between points at least six feet below and forty inches above any trolley feeders or other supply line conductors by which they pass.

Note: Communication grounding conductors may be run vertically on the structure through space occupied by railroad-signal supply circuits in the lower position, as permitted in WAC 296-44-19409 (2)(b), without nonmetallic covering within the supply space.

(d) Separation from through bolts. Vertical runs of communication conductors shall have a clearance of one-eighth of the pole circumference but not less than two inches from through bolts and other metal objects attached thereto which are associated with supply line equipment.

Note: Vertical runs of effectively grounded communications conductors may have a separation of one inch from the end of supply through bolts.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-21295, filed 7/25/86.]

WAC 296-44-242 Grades of construction.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-242, filed 7/25/86.]

WAC 296-44-24205 General. (1) The grades of construction are specified in this section on the basis of the required strengths for safety. Where two or more conditions define the grade of construction required, the grade used shall be the highest one required by any of the conditions.

(2) For the purposes of this section, the voltage values for direct-current circuits shall be considered equivalent to the rms values for alternating-current circuits.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-24205, filed 7/25/86.]

WAC 296-44-24213 Application of grades of construction to different situations. (1) Supply cables. For the purposes of these rules, supply cables are classified by two types as follows:

Type 1

Supply cables conforming to WAC 296-44-21209 (3)(a), (b) or (c) shall be installed in accordance with WAC 296-44-27821 (9)(a).

Type 2

All other supply cables are required to have the same grade of construction as open-wire supply conductors of the same voltage.

(2) Order of grades. The relative order of grades for supply and communication conductors and supporting structures is B, C, and N, Grade B being the highest.

Grade D is specified only for communication lines, and here it is higher than Grade N. Grade D cannot be directly compared with Grades B and C, but subsection (3)(c)(ii) of this section provides for conditions when such a combination of construction requirements exists.

(3) At crossings. Wires, conductors, or other cables of one line are considered to be at crossings when they cross over another line, whether or not on a common supporting structure, or when they cross over or overhang a railroad track or the traveled way of a limited access highway. Joint-use or collinear construction in itself is not considered to be at crossings.

Table 242-1. Grades of Construction for Communication Conductors Crossing Over Railroad Tracks and Supply Lines

When crossing over	Communication conductor grades
Railroad tracks and supply lines of 0 to 750 V to ground, or Type 1 supply cables of all voltages	D
Railroad tracks and supply lines exceeding 750 V to ground	B

(a) Grade of upper line. Conductors and supporting structures of a line crossing over another line shall have the grade of construction specified in subsection (3)(c) of this section, WAC 296-44-24221 and 296-44-24233.

(b) Grade of lower line. Conductors and supporting structures of a line crossing under another line need only have the grades of construction which would be required if the line at the higher level were not there.

(c) Multiple crossings.

(i) Where a line crosses in one span over two or more other lines, or where one line crosses over a span of a second line, which span in turn crosses a span of a third line, the grade of construction of the uppermost line shall be not less than the highest grade which would be required of either one of the lower lines when crossing the other lower line.

(ii) Where communication conductors cross over supply conductors and railroad tracks in the same span, the grades of construction shall be in accordance with those listed in Table 242-1. It is recommended that the placing of communication conductors above supply conductors generally be avoided unless the supply conductors are trolley-contact conductors and their associated feeders.

(4) Conflicts (see definitions). The grade of construction of the conflicting structure shall be as required by WAC 296-44-24233 (1)(e).

Table 242-1. Grades of Construction for Communication Conductors Crossing Over Railroad Tracks and Supply Lines

When crossing over	Communication conductor grades
Railroad tracks and supply lines of 0 to 750 V to ground, or Type 1 supply cables of all voltages	D
Railroad tracks and supply lines exceeding 750 V to ground	B

TABLE 242-2

GRADES OF CONSTRUCTION FOR SUPPLY CONDUCTORS ALONE, AT CROSSING, OR ON THE SAME STRUCTURES WITH OTHER CONDUCTORS

(The voltages listed in this table are phase to ground values for: effectively grounded a. c. circuits, two wire grounded circuits, or center grounded d. c. circuits; otherwise phase to phase values shall be used. The grade of construction for supply conductors, as indicated across the top of the table, must also meet the requirements for any lines at lower levels except when otherwise noted).

Supply Conductors at higher levels [1] / Conductors, tracks and rights of way at lower levels	Constant-potential supply conductors								Constant current supply conductors		Communication conductors used exclusively in the operation of and run as supply lines
	0 - 0.75 kV		0.75 - 8.7 kV				Exceeding 8.7 kV				
	Urban	Rural	Urban		Rural		Urban		Rural				
	Open or Cable	Open or Cable	Open	Cable	Open	Cable	Open	Cable	Open	Cable	Open	Cable	Open or Cable
Exclusive private rights-of-way	N	N	[2]N	N	N	N	[2]N	[2]N	N	N	B, C, or N; see WAC 296-44-24221(1)		C or N; see WAC 296-44-24221(3)
Common or public rights-of-way	N	N	C	N	N	N	[3]C	C	N	N			
Railroad tracks and limited access highways	B	B	B	B	B	B	B	B	B	B	B	B	B
Constant potential supply conductors 0 to 750 V Open or cable	N	N	C	N	N	N	[3]C	C	[4]C	N	B, C, or N; see WAC 296-44-24221(1)		B, C, or N; see WAC 296-44-242221(3)
750 V to 8.7 kV Open	[5]C	N	C	C	N	N	[3]C	C	N	N			
Cable	N	N	C	N	N	N	[3]C	C	N	N			
Exceeding 8.7 kV Open	[5]B	[5]C	B	B	N	N	[3]C	C	N	N			
Cable	[5]C	N	C	N	N	N	[3]C	C	N	N			
Constant current supply conductors: Open or cable	B, C, or N; see WAC 296-44-24221(1)										B,C,or N; see WAC 296-44-24221(1)		B,C,or N; see WAC 296-44-24221(1) & 296-24-24221(3)
Communication conductors: Open or cable, used exclusively in the operation of supply lines[10]	B, C, or N; see WAC 296-44-24221(3)										B,C,or N; see WAC 296-44-24221(1) & 296-44-24221(3)		B,C,or N; see WAC 296-44-24221(3)
Communication conductor: Urban or rural, open or cable [6]	N	N	[7][8]B	C	[7][8]B	C	[8]B	C	[8]B	C	[8]9 B	C or N; see WAC 296-44-24221(1)	B, C, or N; see WAC 296-44-24221(3)

[1] The words "open" and "cable" appearing in the headings have the following meanings as applied to supply conductors: Cable means the Type 1 cables described in subsection (1) of this section; open means open wire and Type 2 cables.

[2] Lines that can fall outside the exclusive private rights-of-way shall comply with the grades specified for lines not on exclusive private rights-of-way.

[3] Supply conductors shall meet the requirements of Grade B construction if the supply circuits will not be promptly deenergized, both initially and following subsequent breaker operations, in the event of a contact with lower supply conductors or other grounded objects.

[4] Grade N construction may be used if crossing over supply services only.

[5] If the wires are service drops, they may have Grade N sizes and tensions as set forth in Table 278-14.

[6] Grade N construction may be used where the communication conductors consist only of not more than one insulated twisted-pair or parallel-lay conductor, or where service drops only are involved.

[7] Grade C construction may be used if the voltage does not exceed 5.0 kV phase to phase or 2.9 kV phase to ground.

[8] The supply conductors need only meet the requirements of Grade C construction if both of the following conditions are fulfilled:

(1) The supply voltage will be promptly removed from the communication plant by deenergization or other means, both initially and following subsequent circuit breaker operations in the event of a contact with the communication plant.

(2) The voltage and current impressed on the communication plant in the event of a contact with the supply conductors are not in excess of the safe operating limit of the communication protective devices.

[9] Grade C construction may be used if the current cannot exceed 7.5 A or the open-circuit voltage of the transformer supplying the circuit does not exceed 2.9 kV.

[10] Communication circuits located below supply conductors shall not affect the grade of construction of the supply circuits.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-24213, filed 7/25/86.]

WAC 296-44-24221 Grades of construction for conductors. The grades of construction required for conductors are given in Tables 242-2 and 242-3. For the purpose of these tables certain classes of circuits are treated as follows:

(1) Constant-current circuit conductors. The grade of construction for conductors of a constant-current supply circuit involved with a communication circuit and not in Type 1 cable shall be based on either its current rating or on the open-circuit voltage rating of the transformer supplying such circuit, as set forth in Tables 242-2 and 242-3. When the constant current supply circuit is in Type 1 cable, the grade of construction shall be based on its nominal full-load voltage.

(2) Railway feeder and trolley-contact circuit conductors. Railway feeder and trolley contact circuit conductors shall be considered as supply conductors for the purpose of determining the required grade of construction.

(3) Communication circuit conductors used exclusively in the operation of supply lines. Communication circuit conductors used exclusively in the operation of supply lines shall have their grade of construction determined as follows:

(a) By the requirements for ordinary communication circuits when conforming to WAC 296-44-31783 (1)(c).

(b) By the requirements for supply circuits when defined by WAC 296-44-31783 (1)(d).

(4) Fire alarm circuit conductors. Fire alarm circuit conductors shall be considered as other communication circuit conductors except that they shall always meet Grade D construction where the span length is from zero to one hundred fifty feet and Grade C construction where the span length exceeds one hundred fifty feet.

(5) Neutral conductors of supply circuits. Supply-circuit neutral conductors, which are effectively grounded throughout their length and are not located above supply conductors of more than 750 volts to ground, shall have the same grade of construction as supply conductors of not more than 750 volts to ground, except that they need not meet any insulation requirements. Other neutral conductors shall have the same grade of construction as the phase conductors of the supply circuits with which they are associated.

Table 242-3. Grades of Construction for Communication Conductors Alone, or in Upper Position of Crossing or on Joint Poles

(The voltages listed in this table are phase to ground values for: effectively grounded ac circuits, two wire grounded circuits, or center grounded dc circuits; otherwise phase to phase values shall be used. The grade of construction for supply conductors, as indicated across the top of the table, must also meet the requirements for any lines at lower levels except when otherwise noted.) (Placing of communication conductors at higher levels at crossings, or on jointly used poles should generally be avoided, unless the supply conductors are trolley-contact conductors and their associated feeders.)

Conductors, tracks, and rights-of-way at lower levels	Communication conductors (Communication conductors, rural or urban, open or cable, including communication conductors run as such, but used exclusively in the operation of supply lines.)
Exclusive private right-of-way	N
Common or public rights-of-way	N
Railroad tracks and limited access highways	D
Constant potential supply conductors[1]	
0 to 750 V	
Open or cable	N
750 V to 2.9 kV	
Open or cable	C
Exceeding 2.9 kV	
Open	B
Cable	C
Constant current supply conductors[1]	
0 to 7.5 A	
Open[2]	C
Exceeding 7.5 A	
Open[2]	[3]B
Communication conductors, open or cable, used exclusively in the operation of supply lines	[4]B, C, or N
Communication conductors, open or cable, urban or rural	N

[1] The words "open" and "cable" appearing in the headlines have

the following meaning as applied to supply conductors: Cable means Type 1 cables as described in WAC 296-44-24213 (1)(a); open means open wire and also Type 2 cables, as described in WAC 296-44-24213 (1)(b).

2 Where constant current circuits are in Type 1 cable, the grade of construction shall be based on the nominal full-load voltage.

3 Grade C construction may be used if the open circuit voltage of the transformer supplying the circuit does not exceed 2.9 kV.

4 See subsection (3) of this section.

(6) Surge protection wires. Surge protection wires shall be of the same grade of construction as the supply conductors with which they are associated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-24221, filed 7/25/86.]

WAC 296-44-24233 Grades of construction for line supports. (1) Structures. The grade of construction shall be that required for the highest grade of conductors supported except as modified by the following:

(a) The grade of construction of jointly used structures, or structures used only by communication lines, need not be increased merely because the communication wires carried on such structures cross over trolley-contact conductors of 0 to 750 volts to ground.

(b) Structures carrying Grade C or D fire alarm conductors, where alone, or where concerned only with other communication conductors, need meet only the requirements of Grade N.

(c) Structures carrying supply service drops of 0 to 750 volts to ground shall have at least the grade of construction required for supply line conductors of the same voltage.

(d) Where the communication lines cross over supply conductors and a railroad in the same span and Grade B is required by WAC 296-44-24213 (3)(c)(ii) for the communication conductors, due to the presence of railroad tracks, the grade of the structures shall be D.

(e) The grade of construction required for a conflicting structure (first circuit) shall be determined from the requirements of WAC 296-44-24221 for crossings. The conflicting structure's conductors (first circuit) shall be assumed to cross the other circuit's conductors (second circuit) for the purposes of determining the grade of construction required for the conflicting structure.

Note: The resulting structure grade requirement could result in a higher grade of construction for the structure than for the conductors carried thereon.

(2) Crossarms and support arms. The grade of construction shall be that required for the highest grade of conductors carried by the arm concerned except as modified by the following:

(a) The grade of construction of arms carrying only communication conductors need not be increased merely because the conductors cross over trolley-contact conductors of 0 to 750 volts to ground.

(b) Arms carrying Grade C or D fire alarm conductors, where alone or where concerned with other communication conductors, need meet only the requirements for Grade N.

(c) Arms carrying supply service drops of 0 to 750 volts to ground shall have at least the grade of construction required for supply line conductors of the same voltage.

(d) Where communication lines cross over supply conductors and a railroad in the same span and Grade B is required by WAC 296-44-24213 (3)(c)(ii) for the communication conductors due to the presence of railroad tracks, the grade of the arm shall be D.

(3) Pins, armless construction brackets, insulators, and conductor fastenings. The grade of construction for pins and armless construction brackets, insulators, and conductor fastenings shall be that required for the conductor concerned except as modified by the following:

(a) The grade of construction need not be increased merely because the supported conductors cross over trolley-contact conductors of 0 to 750 volts to ground.

(b) Grade N construction is sufficient when only Grade C or D fire alarm conductors or other communication conductors are concerned.

(c) Supply service drops of 0 to 750 volts to ground only require the same grade of construction as supply-line conductors of the same voltage.

(d) When Grade B construction is required by WAC 296-44-24213 (3)(c)(ii) for the communication conductors due to the presence of railroad tracks, Grade D construction shall be used when supporting communication lines which cross over supply conductors and a railroad in the same span.

(e) When communication conductors are required to meet Grade B or C, only the requirements for mechanical strength for these grades is required.

(f) Insulators for use on open conductor supply lines shall meet the requirements of WAC 296-44-295 for all grades of construction.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-24233, filed 7/25/86.]

WAC 296-44-263 Loading for Grades B, C, and D.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-263, filed 7/25/86.]

WAC 296-44-26309 General loading requirements and maps. (1) General.

(a) It is necessary to assume the loadings which may be expected to occur on a line because of wind and ice during all seasons of the year. These minimum weather loadings shall be the values of loading resulting from the application of subsection (2) or (3) of this section. Where both rules apply, the required loading shall be that which, when combined with the appropriate overload capacity factors, has the greater effect on strength requirements.

(b) Where construction or maintenance loads exceed those imposed by (a) of this subsection, which may occur more frequently in light loading areas, the assumed loadings shall be increased accordingly.

(c) It is recognized that loadings actually experienced in certain areas in each of the loading districts may be greater, or in some cases, may be less than those specified in these rules. In the absence of a detailed loading

analysis, no reduction in the loadings specified therein shall be made without approval of the administrative authority.

(2) Combined ice and wind loading. Three general degrees of loading due to weather conditions are recognized and are designated as heavy, medium, and light loading. Figure 263–1 shows the districts in the states in which these loadings are normally applicable.

Note: The localities are classified in the different loading districts according to the relative simultaneous prevalence of wind velocity and thickness of ice which accumulates on wires. Light loading is for places where little, if any, ice accumulates on wires.

Table 263–1 shows the minimum radial thicknesses of ice and the wind pressures to be used in calculating loadings. Ice is assumed to weigh fifty–seven pounds per cubic foot.

(3) Extreme wind loading. Figure 263–2 is a wind map of the United States which shows the minimum horizontal wind pressures to be used for calculating loads upon tall structures. For wind pressure at a specific location use a value not less than that of the nearest pressure line. If any portion of a structure or supported facilities is located in excess of sixty feet above ground or water level, these wind pressures shall be applied to the entire structure and supported facilities without ice covering.

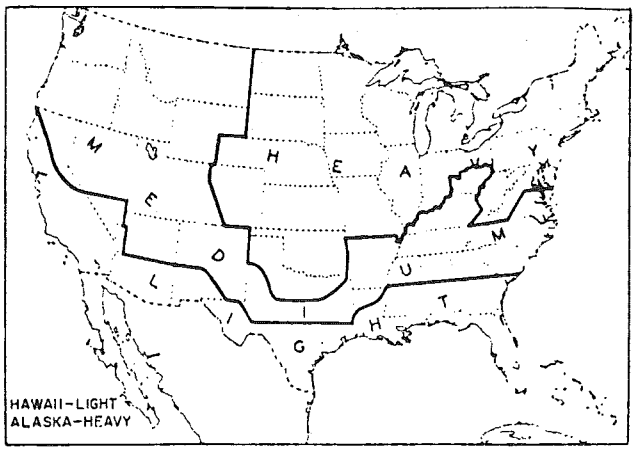
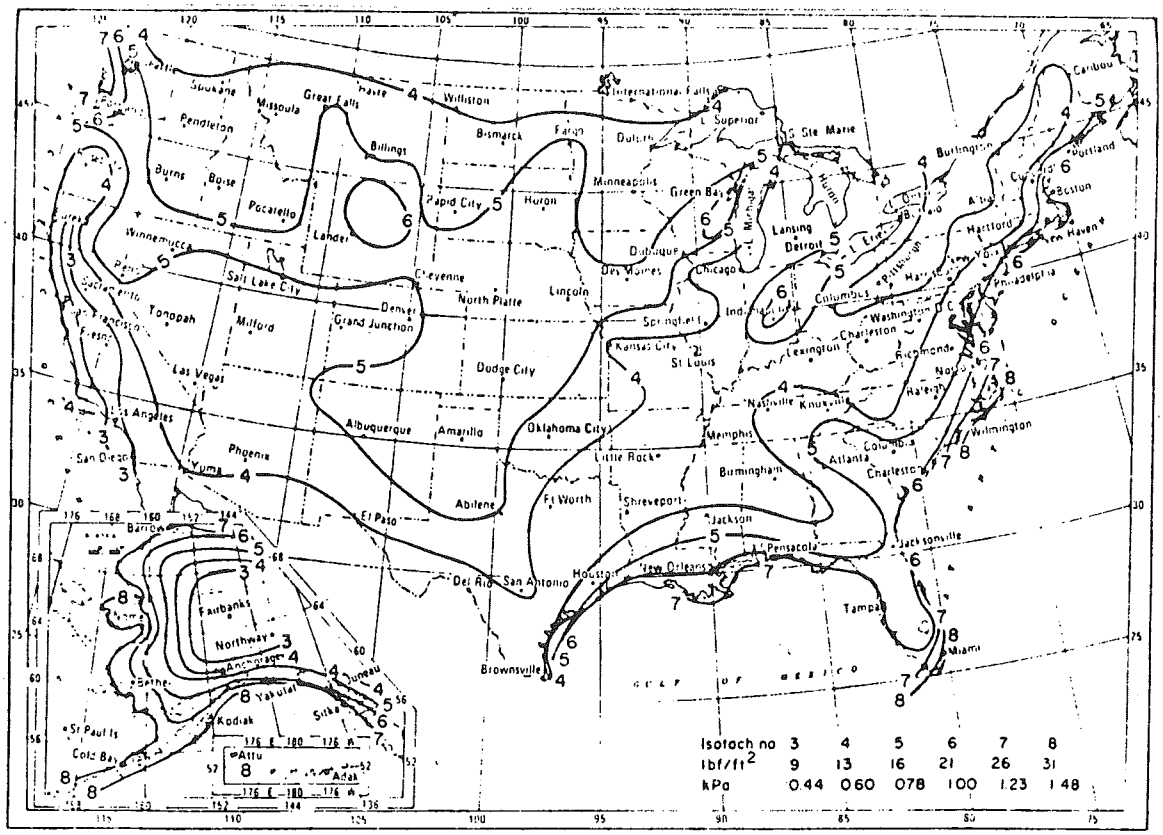


Fig. 263–1
General Loading Map of United States with Respect to Loading of Overhead Lines

Table 263–1 Ice, Wind and Temperature

	Loading Districts (for use with WAC 296-44-26309(2))			Extreme Wind Loading (for use with WAC 296-44-26309(3))
	Heavy	Medium	Light	
Radial thickness of ice (in)	0.50	0.25	0	0
Horizontal wind pressure in pounds per square foot	4	4	9	See Fig 250–2
Temperature (°F)	0	+15	+30	+60



Extreme Wind Pressure and Force Per Unit Area at 30 Feet Above Ground (Based on Fastest Wind)

Note 1: The values of wind pressure given in Figure 263–2 represent the loading of wind upon cylindrical surfaces at thirty feet above ground level. They are based upon fifty year isotachs given in ANSI A58.1–1972 [6]. These have been converted from miles per hour to pressure on cylindrical surfaces by the formulas

pressure in lb/ft^2 = $0.00256 \cdot (^{v}mi/h)^2$
and rounding the values obtained.

Note 2: Wind velocity usually increases with height; therefore, experience may show that the wind pressures specified herein need to be further increased.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–26309, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296–44–26321 Conductor loading. (1) General. Ice and wind loads shall be as specified in WAC 296–44–26309.

(a) Where a cable is attached to a messenger, the specified loadings shall be applied to both cable and messenger.

(b) In determining wind loadings on a bare stranded conductor or multiconductor cable, the assumed projected area shall be that of a smooth cylinder whose outside diameter is the same as that of the conductor or cable.

Note: Experience has shown that as the size of multiconductor cable decreases, the actual projected area decreases, but the roughness factor increases and offsets the reduction in projected area.

(c) In determining loadings on ice–covered bare stranded conductor or multiconductor cables, the coating of ice shall be considered a hollow cylinder touching the outer strands of the bare stranded conductor or the outer circumference of the multiconductor cable. For bundled conductors, the coating of ice shall be considered as individual hollow cylinders around each subconductor.

(2) Loading components. The components of loading and total loading shall be as follows:

(a) Vertical loading component. The vertical load on a conductor or messenger shall be its own weight plus the

weight of conductors, spacers, or

Table 263-2 Temperatures and Constants

	Loading districts (for use with WAC 296-44-26309(2))			Extreme wind loading (for use with WAC 296-44-26309(3))
	Heavy	Medium	Light	
Temperature (°F)	0	+15	+30	+60
Constant to be added to the resultant (all conductors) in pounds per ft	0.30	0.20	0.05	0.0

equipment which it supports, ice covered where specified in WAC 296-44-26309.

(b) Horizontal loading component. The horizontal load shall be the horizontal wind pressure specified in WAC 296-44-26309 applied at right angles to the direction of the line to the projected area of the conductor or messenger and conductors, spacers, or equipment which it supports, ice covered where specified in WAC 296-44-26309.

(c) Total loading. The total load on a conductor or messenger shall be the resultant of Components 1 and 2 above, calculated at the temperature specified in Table 263-2, to which resultant has been added the constant specified in Table 263-2. In all cases the conductor or messenger tension shall be computed from this total loading.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-26321, filed 7/25/86.]

WAC 296-44-26333 Loads upon line supports. (1) Assumed vertical loading. The vertical loads upon poles, towers, foundations, crossarms, pins, insulators, and conductor fastenings shall be their own weight plus the superimposed weight which they support, including all wires and cables, in accordance with WAC 296-44-26321 (1) and (2)(a), together with the effect of any difference in elevation of supports. The radial thickness of ice shall be computed only upon wires, cables, and messengers, and not upon supports.

(2) Assumed transverse loading. The total transverse loading upon poles, towers, foundations, crossarms, pins, insulators, and conductor fastenings shall include the following.

(a) Transverse loading from conductors and messengers. The transverse loading from conductors and messengers shall be the horizontal loading specified in WAC 296-44-26321. For supporting structures carrying more than ten wires, not including cables supported by messengers, where the pin spacing does not exceed fifteen inches, the transverse wind load shall be calculated on two-thirds of the total number of such wires with a minimum of ten wires, except in light loading areas defined by WAC 296-44-26309.

(b) Structure loading. The transverse loading upon structures and equipment shall be computed by applying, at right angles to the direction of the line, the appropriate horizontal wind pressure given in WAC 296-44-26309. This pressure shall be applied upon the projected surfaces of the structures and equipment supported thereon, without ice covering. The following shape factors shall be applied.

(i) Cylindrical structures and components. Wind loads on straight or tapered cylindrical structures or structures composed of numerous narrow relatively flat panels which combine to form a total cross section that is approximately circular or elliptical in shape shall be computed from the assumed unit wind pressure specified in WAC 296-44-26309 applied to the projected area multiplied by a shape factor of 1.0.

(ii) Flat surfaced structures and components. Wind loads on flat surfaced structures, having solid or enclosed flat sides and an overall cross section that is substantially square or rectangular, shall be computed from the assumed unit wind pressures specified in WAC 296-44-26309 applied to the projected area of one face multiplied by a shape factor of 1.6 to allow for pressure on flat surfaces.

(iii) Latticed structures. Wind loads on essentially square or rectangular latticed structures or components shall be computed from the assumed unit wind pressures specified in WAC 296-44-26309 applied to the sum of the projected areas of the members of the front face multiplied by a shape factor of 3.2 to allow for wind pressure if structural members are flat surfaced or 2.0 if structural surfaces are cylindrical. The total, however, need not exceed the load which would occur on a solid structure of the same outside dimension.

Note: The shape factors listed under (b)(i), (ii) and (iii) of this subsection may be reduced if wind tunnel tests or rational aerodynamic analysis produce evidence that such a reduction is justifiable. In the absence of such tests or analyses, the factors given above shall be considered to be minimum values.

(c) At angles. Where a change in direction of wires occurs, the loading upon the structure, including guys, shall be assumed to be a resultant load equal to the vector sum of the transverse wind load as derived above and the resultant load imposed by the wires due to their change in direction. In deriving these loadings, a wind direction shall be assumed which will give the maximum resultant load, proper reduction being made in loading to account for the reduced wind pressure on the wires resulting from the angularity of the application of the wind to the wires.

(d) Span lengths. The calculated transverse load shall be based upon the average of the actual lengths of the two spans adjacent to the structure concerned.

(3) Assumed longitudinal loading.

(a) Change in grade of construction. The longitudinal loading upon supporting structures, including poles, towers, and guys at the ends of sections required to be of Grade B construction, when located in lines of lower than Grade B construction, shall be taken as an unbalanced pull in the direction of the higher grade section equal to the larger of the following values:

(i) The pull of two-thirds, and in no case less than two of the conductors which have rated breaking strength of three thousand pounds or less, such two-

thirds of the conductors being selected so as to produce the maximum stress in the support.

(ii) The pull of one conductor when there are eight or less conductors (including overhead ground wires) having rated breaking strength of more than three thousand pounds and the pull of two conductors when there are more than eight conductors, such conductors being selected so as to produce the maximum stress in the support.

(b) Jointly used poles at crossings over railroads, communication lines, or limited access highways. Where a joint line crosses over a railroad, a communication line, or a limited access highway, and Grade B is required for the crossing span, the tension in the communication conductors of the joint line shall be considered as limited to one-half their rated breaking strength, provided they are smaller than WG No. 8 Stl, if of steel, or AWG No. 6 if of copper.

(c) Dead ends. The longitudinal loading upon supporting structures at dead ends for line terminations shall be taken as an unbalanced pull equal to the tensions of all conductors and messengers (including overhead ground wires); except that with spans in each direction from the dead-end structure, the unbalance pull shall be taken as the difference in tensions.

(d) Unequal spans and unequal vertical loading. Where longitudinal loads can be created by the difference in tensions in the wires in adjacent spans caused by unequal vertical loading or unequal spans, the structures should be capable of supporting this unbalanced longitudinal loading.

(e) Stringing loads. Proper allowance should be made for longitudinal loads which may be produced on the structures by wire stringing operations.

(f) Longitudinal capability. It is recommended that structures having a longitudinal strength capability be provided at reasonable intervals along the line.

(g) Communication conductors on unguyed supports at railroad crossings and limited access highways. The longitudinal loading shall be assumed equal to an unbalanced pull in the direction of the crossing of all open-wire conductors supported, the pull of each conductor being taken as fifty percent of its rated breaking strength in the heavy loading district, thirty-three and one-third percent in the medium loading district, and twenty-two and one-fourth percent in the light loading district.

(4) Simultaneous application of loads. Where a combination of vertical, transverse, or longitudinal loads may occur simultaneously, the structure shall be designed to withstand the simultaneous application of these loads.

Note: Under the extreme wind conditions of WAC 296-44-26309(3), an oblique wind may require greater structural strength than that computed under subsections (2) and (3) of this section.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-26333, filed 7/25/86.]

PART F--INSTALLATION AND MAINTENANCE OF ELECTRIC SUPPLY AND COMMUNICATION LINES

WAC 296-44-278 Strength requirements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-278, filed 7/25/86.]

WAC 296-44-27809 Preliminary assumptions. (1) It is recognized that deformation, deflections, or displacement of parts of the structure will, in some cases, change the effects of the loads assumed. In the calculation of stresses, allowance may be made for such deformation, deflection or displacement of supporting structures including poles, towers, guys, crossarms, pins, conductor fastenings, and insulators when the effects can be accurately evaluated. Such deformation, deflection, or displacement should be calculated using the WAC 296-44-26309 loads prior to application of the overload factors required by this section. For crossings or conflicts, the calculations shall be subject to mutual agreement.

(2) It is recognized that newly developed materials may become available. It is further recognized that, while these materials are in the process of development, they must be tested and evaluated. Trial installations are permitted where qualified supervision is provided.

(3) The overload capacity factors shown in the tables of this section apply for the combined ice and wind loading conditions specified in WAC 296-44-26309(2). For the extreme wind loading condition specified in WAC 296-44-26309(3), an overload capacity factor of not less than 1.0 shall be applied for structures and their foundations, and 1.25 for other supported facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-27809, filed 7/25/86.]

WAC 296-44-27821 Grades B and C construction. (1) Supporting structure. The strength requirements for supporting structures may be met by the structures alone or with the aid of guys and/or braces.

(a) Metal, prestressed, and reinforced concrete structures. The structures shall be designed to withstand the loads in WAC 296-44-26333 multiplied by the appropriate overload capacity factors given in Tables 278-1 or 278-2. (Where guys are used, see WAC 296-44-27821(3).)

(i) Minimum strength. All structures (including those below sixty feet) shall withstand, without conductors, the extreme wind pressure in WAC 296-44-26333, applied in any direction on the structure times an overload capacity factor of 1.0. A gust factor appropriate for the wind pressure and structure height should be considered.

(ii) Strength at angles in a line. At an angle in a line, the strength of the support shall be sufficient to withstand the total transverse loadings specified in WAC 296-44-26333 multiplied by the appropriate overload capacity factor for transverse strength given in Tables 278-1 or 278-2.

(b) Wood structures. Wood structures shall be of such material and dimensions as to meet the following requirements. (Where guys are used, see WAC 296-44-27821(3).)

(i) Designated fiber stress.

(A) Natural wood poles of various species meeting the requirements of ANSI 05.1-1979 [18], shall be considered as having the designated fiber stresses set forth in that standard.

(B) Appropriate adjustments in designated fiber stresses shall be made for sawn or laminated wood.

Table 278-1. Overload Capacity Factors for Reinforced Concrete Structures (Not Prestressed)

	Overload capacity factors	
	Grade B	Grade C
Vertical strength	4.0	2.67
Transverse strength		
Wind load	4.0	2.67
Wire tension load at angles	2.0	1.33
Longitudinal strength		
In general	1.0	no requirement
At dead ends	2.0	1.33

Note: The factors in this table apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions see WAC 296-44-27809(3).

Table 278-2. Overload Capacity Factors for Metal and Prestressed Concrete Structures

	Overload capacity factors	
	Grade B	Grade C
Vertical strength	1.50	1.10
Transverse strength		
Wind load	2.50	2.20
Wire tension load at angles	1.65	1.10
Longitudinal strength		
At crossings		
In general	1.10	no requirement
At dead ends	1.65	1.10
Elsewhere		
In general	1.00	no requirement
At dead ends	1.65	1.10

Note: The factors in this table apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions, see WAC 296-44-27809(3).

(ii) Transverse and vertical strength. Wood structures shall be designed to withstand the transverse and vertical loads in WAC 296-44-26333, multiplied by the appropriate overload capacity factor given in Table 278-3, without exceeding the designated fiber stress.

Note: When installed, naturally grown wood poles acting as single based structures or unbraced multiple pole structures, shall meet the requirements of WAC 296-44-27821 (1)(b)(ii) or (iii) without exceeding the designated fiber stress at the ground line for unguyed poles or at the point of attachment for guyed poles.

(iii) Longitudinal and dead-end strength. Wood structures shall be designed to withstand the longitudinal and dead-end loadings in WAC 296-44-26333 multiplied by the appropriate overload capacity factor in Table 278-3 without exceeding the designated fiber stress.

Note 1: At a Grade B crossing, in a straight section of line, wood structures complying with the transverse strength requirements of WAC 296-44-27821 (1)(b)(ii), without the use of transverse guys shall be considered as having the required longitudinal strength, providing the longitudinal strength is comparable to the transverse strength of the structure. This exception does not modify the requirements of this rule for dead-ends.

Note 2: At a Grade B crossing of a supply line over a highway or a communication line where there is an angle in the supply line, wood structures shall be considered as having the required longitudinal strength if all of the following conditions are met:

(A) The angle is not over twenty degrees.

(B) The angle structure is guyed in the plane of the resultant of the conductor tensions. The tension in this guy under the loading in WAC 296-44-26333 multiplied by an overload capacity factor of 2.0 shall not exceed the allowable guy value specified in WAC 296-44-27821(3).

(C) The angle structure has sufficient strength to withstand, without guys, the transverse loading of WAC 296-44-26333, which would exist if there were no angle at that structure with an overload capacity factor of 4.0 when installed or 2.67 at replacement.

Note 3: When installed, naturally grown wood poles acting as single based structures or unbraced multiple pole structures, shall meet the requirements of WAC 296-44-27821 (1)(b)(ii) or (iii) without exceeding the designated fiber stress at the ground line for unguyed poles or at the point of attachment for guyed poles.

(iv) Strength at angles in a line. At an angle in the line, the wood structure shall be designed to withstand the total transverse loading in WAC 296-44-26333 multiplied by the appropriate overload capacity factor given in Table 278-3 without exceeding the designated fiber stress.

Table 278-3 Overload Capacity Factors for Wood Structures

	Grade B		Grade C	
	When installed	At replacement	When installed	At replacement
Transverse (wind) and Vertical strength				
At crossings	4.0	2.67	2.67	1.33
Elsewhere	4.0	2.67	2.00	1.33
Transverse (wire tension load) strength				
At crossings	2.0	1.33	1.33	1.00
Elsewhere	2.0	1.33	1.33	1.00

	Grade B		Grade C	
	When installed	At replacement	When installed	At replacement
Longitudinal Strength				
In general	1.33	1.00	no requirement	no requirement
At dead-ends	2.00	1.33	1.33	1.00

Notes: (1) Where structures are built for temporary service the overload capacity factors at replacement may be used provided that the designated fiber stress is not exceeded during the life of the structure.
(2) The factors in this table apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions, see WAC 296-44-27809(3).
(3) Metal portions of a structure, except guys, may use the overload capacity factors for metal shown in Table 278-2.

(v) Strength of guyed poles. Guyed poles shall be designed as columns, resisting the vertical component of the tension in the guy plus any other vertical loads on such poles.

(vi) Spliced and stub-reinforced poles. The use of stub reinforcements or permanent splices at any section along the pole that develops the required strength of the pole is permitted, provided the remainder of the pole is in good condition and is of sufficient size to develop its required strength.

(vii) Average strength of three poles. A pole (single-base structure) not individually meeting the transverse strength requirements will be permitted when reinforced by a stronger pole on each side, if the average strength of the three poles meets the transverse strength requirements, and the weak pole has not less than seventy-five percent of the required strength. An extra pole inserted in a normal span for the purpose of supporting a service drop may be ignored.

Note: This rule does not apply to crossings over railroads, communication lines, or limited access highways.

(c) Transverse-strength requirements for structures where side guying is required, but can only be installed at a distance.

Grade B: In the case of structures where, because of very heavy or numerous conductors or relatively long spans, the transverse-strength requirements of this section cannot be met except by the use of side guys or special structures, and if it is physically impractical to employ side guys, the transverse-strength requirements may be met by side-guying the line at each side of, and as near as practical to, the crossing, or other transversely weak structure, and with a distance between such side-guyed structures of not over eight hundred feet provided that:

(i) The side-guyed structures for each such section of eight hundred feet or less shall be constructed to withstand the calculated transverse load due to wind on the supports and ice-covered conductors, on the entire section between the side-guyed structures.

(ii) The line between such side-guyed structures shall be substantially in a straight line and the average length of span between the side-guyed structures shall not exceed one hundred fifty feet.

(iii) The entire section between the transversely strong structures shall comply with the highest grade of construction concerned in the given section, except as to the transverse strength of the intermediate poles or towers.

Grade C: The above provisions do not apply to Grade C.

(d) Longitudinal-strength requirements for sections of higher grade in lines of a lower grade construction.

(i) Methods of providing longitudinal-strength.

Grade B: The longitudinal-strength requirements for sections of line of higher grade in lines of a lower grade (for assumed longitudinal loading, see WAC 296-44-26333) may be met by placing supporting structures of the required longitudinal-strength at either end of the higher grade section of the line.

Where this is impractical, the supporting structures of the required longitudinal-strength may be located one or more span lengths away from the section of higher grade, within five hundred feet on either side and with not more than eight hundred feet between the longitudinally strong structures, provided such structures and the line between them meet the requirements as to transverse strength and stringing of conductors, of the highest grade occurring in the section, and provided that the line between the longitudinally strong structure is approximately straight or suitably guyed.

The requirements may also be met by distributing the head guys over two or more structures on either side of the crossing, such structures and the line between them complying with the requirements for the crossing as to transverse strength and as to conductors and their fastenings. Where it is impractical to provide the longitudinal-strength, the longitudinal loads shall be reduced by increasing the conductor sags. This may require greater conductor separations. (See WAC 296-44-21265(2).)

Grade C: The above provisions do not apply to Grade C.

(ii) Flexible supports.

Grade B: When supports of the section of higher grade are capable of considerable deflection in the direction of the line, as with wood or concrete poles, or some types of metal poles and towers, it may be necessary to increase the normal clearances specified in WAC 296-44-212 or to provide head guys or special reinforcement to prevent such deflection.

Flexible metal structures may have to be head-guyed or otherwise reinforced to prevent reduction in the clearances required in WAC 296-44-212.

Grade C: The above provision does not apply to Grade C.

Table 278–4. Overload Capacity Factors for Foundations and Settings

	Overload capacity factors	
	Grade B	Grade C
Vertical strength	1.5	1.1
Transverse strength		
Wind load	2.5	2.2
Wire tension load	1.65	1.1
Longitudinal strength		
In general	1.1	1.0
At dead ends	1.65	1.1

Note: The factors in this table apply for the loading conditions of WAC 296–44–26309(2). For extreme wind loading conditions, see WAC 296–44–27809(3).

(2) Strength of foundations and settings. The loadings in WAC 296–44–26333 multiplied by the overload factors given in Table 278–4 shall be applied to the structure. Foundations and settings shall be designed or be determined by experience to withstand the reactions resulting from these applied loadings.

Note: Excessive movement of foundations and guy anchors may reduce structure strength or impair clearances.

(3) Strength of guys and guy anchors. The general requirements for guys and guy insulators are covered under WAC 296–44–31729 and 296–44–31738, respectively. Guy anchors shall withstand the loads in WAC 296–44–26333 multiplied by the overload factors given in Table 278–5.

(a) Metal and prestressed concrete structures. Guys shall be considered as an integral part of the structure and shall withstand the loads in WAC 296–44–26333, multiplied by the overload factors given in Table 278–2, without exceeding ninety percent of the rated breaking strength of the guy.

(b) Wood and reinforced concrete poles and structures. When guys are used to meet the strength requirements they shall be considered as taking the entire load in the direction in which they act, the structure acting as a strut only, except for those structures considered to possess sufficient rigidity so that the guy can be considered an integral part of the structure.

Table 278–5. Overload Capacity Factors for Guys

	Overload capacity factors	
	Grade B	Grade C
Transverse strength		
Wind load	2.67	2.0
Wire tension load	1.5	1.15
Longitudinal strength (except at angles)		
In general	1.0	no requirement
At dead ends	[1]1.5	[1]1.15

[1] If deflection of supporting structures is taken into account in the computations, the overload capacity factors of 1.5 shall be increased to 1.67; 1.15 shall be increased to 1.33.

Note: The factors in the table apply for the loading conditions of WAC 296–44–26309(2). For extreme wind loading conditions, see WAC 296–44–27809(3).

(i) Guys shall be of such material and dimension to withstand the loads in WAC 296–44–26333, multiplied by the overload capacity factors given in Table 278–5 without exceeding ninety percent of the rated breaking strength of the guy.

(ii) At an angle in the line, the guy shall be of such material and dimension to withstand the total transverse loads in WAC 296–44–26333, multiplied by the overload capacity factors given in Table 278–5 without exceeding ninety percent of the rated breaking strength of the guy.

(4) Crossarms.

(a) Vertical strength. Crossarms shall withstand the vertical loads specified in WAC 296–44–26333 without exceeding fifty percent of the designated fiber stress of the material (or ultimate strength) where applicable.

(b) Bracing. Crossarms shall be securely supported by bracing, if necessary, so as to support safely all expected loads to which they may be subjected in use including line personnel working on them.

Table 278–6. Minimum Dimensions of Crossarm Cross Section

Number of pins	Grades of construction		
	Grade B	Grade C	
		Supply	Communication
2 or 4 in:	3 X 4	2 3/4 X 3 3/4	—
6 or 8 in:	3 1/4 X 4 1/4	3 X 4	—
6 in:	—	—	2 3/4 X 3 3/4
10 in:	—	—	3 X 4

(c) Longitudinal strength.

(i) General. Crossarms shall withstand without exceeding their designated fiber stress (or ultimate strength), the applicable longitudinal loads given in WAC 296–44–26333, or seven hundred pounds applied at the outer conductor attachment points, whichever is greater. At each end of a transversely weak section, as described in WAC 296–44–27821 (1)(c), the longitudinal load shall be applied in the direction of the weak section.

(ii) Methods of meeting WAC 296–44–27821 (4)(c).
Grade B: Where conductor tensions are limited to a maximum of two thousand pounds per conductor, double wood crossarms having cross sections specified in Table 278–6 and properly assembled, will be considered as meeting the strength requirements specified in WAC 296–44–27821 (4)(d)(i).
Grade C: This requirement is not applicable.

(d) Material and minimum size. Wood crossarms of selected Southern pine or Douglas fir shall have a cross section of not less than those shown in Table 278–6. Crossarms of other suitable timber or of other materials may be used provided they are of equivalent strength.

(e) Double crossarms or brackets.

Grade B: Where pin type construction is used, double crossarms or a support assembly of equivalent strength shall be used at each crossing structure, at ends of joint use or conflict sections, at dead ends and at corners where the angle of departure from a straight line exceeds twenty degrees. Under similar conditions, where a bracket supports a conductor operated at more than 750 volts to ground and there is no crossarm below, double brackets shall be used.

Note: The above does not apply where communication cables or conductors cross below supply conductors and either are attached to the same pole, or where supply conductors are continuous and of uniform tension in the crossing span and each adjacent span. This exception does not apply to railroad crossings and limited access highways except by mutual agreement.

Grade C: The above requirement is not applicable.

(f) Location. At crossings, crossarms should be attached to the face of the structure away from the crossing, unless special bracing or double crossarms are used.

(5) Metal crossarms. Metal crossarms shall withstand the loads in WAC 296-44-26333 multiplied by the overload capacity factors in Table 278-2.

(6) Strength of pin type or similar construction and conductor fastenings.

(a) Longitudinal strength.

(i) General. Pin type or similar construction and ties or other conductor fastenings shall withstand the applicable longitudinal loads given in WAC 296-44-26333, or seven hundred pounds applied at the pin, whichever is greater. At each end of a transversely weak section as described in WAC 296-44-27821 (1)(c), the longitudinal load shall be applied in the direction of the weak section.

Grade C: No requirement.

(ii) Method of meeting WAC 296-44-27821 (6)(a)(i).

Grade B: Where conductor tensions are limited to two thousand pounds and such conductors are supported on pin insulators, double wood pins and ties or their equivalent, will be considered to meet the requirements of WAC 296-44-27821 (6)(a)(i).

Grade C: No requirement.

(iii) At dead ends and at ends of higher grade construction in line of lower grade.

Grade B: Pins and ties or other conductor fastenings connected to the structure at a dead end or at each end of the higher grade section shall be of sufficient strength to withstand at all times without exceeding their ultimate strength, an unbalanced pull due to the conductor loading specified in WAC 296-44-26321.

Grade C: This requirement is not applicable except for dead ends.

(iv) At ends of transversely weak sections.

Grade B: Pins and ties or other conductor fastenings connected to the structure at each end of the transversely weak section as described in WAC 296-44-27821 (1)(c) shall be such as to withstand at all times without exceeding their ultimate strength, the unbalanced pull in the direction of the transversely weak section of the conductor supported, under the loading prescribed in WAC 296-44-26321.

Grade C: No requirement.

(b) Double pins and conductor fastenings.

Grade B: Where wood pins are used, double pins and conductor fastenings shall be used where double crossarms or brackets are required by WAC 296-44-27821 (4)(e).

Note: The above does not apply where communication cables or conductors cross below supply conductors and either are attached to the same pole, or where supply conductors are continuous and of uniform tension in a crossing span and each adjacent span. This exception does not apply in the case of railroad crossings and limited access highway crossings except by mutual agreement.

Grade C: No requirement.

(c) Single supports used in lieu of double wood pins. A single conductor support and its conductor fastening when used in lieu of double wood pins shall develop strength equivalent to double wood pins and their conductor fastenings as specified in WAC 296-44-27821 (6)(a)(i).

(7) Armless construction.

(a) General. Open conductor armless construction is a type of open conductor supply line construction in which conductors are individually supported at the structure without the use of crossarms.

(b) Insulating material. Strength of insulating material shall meet the requirements of WAC 296-44-295.

(c) Other components. Strengths of other components shall meet the appropriate requirements of WAC 296-44-27809 and 296-44-27821.

(8) Open supply conductors.

(a) Minimum sizes of supply conductors. Supply conductors shall have a rated breaking strength and an overall diameter of metallic conductor not less than that of medium-hard-drawn copper of the AWG size shown in Table 278-7 except that conductors made entirely of bare or galvanized iron or steel shall have an overall diameter not less than Stl. WG of the gage sizes shown.

Note 1: At railroad crossings, for stranded conductors, other than those in which a central core is entirely covered by the outside wires, any individual wire of such a stranded conductor containing steel shall be not less than 0.100 inch in diameter if copper or aluminum clad and not less than 0.115 inch in diameter if otherwise protected or if bare.

Note 2: Service drops of 0 to 750 volts to ground may have the sizes set forth in WAC 296-44-27847(5).

(b) Sags and tensions. Conductor sags shall be such that, under the assumed loading of WAC 296-44-26321 for the district concerned, the tensions of the conductor shall not be more than sixty percent of its rated breaking strength. Also the tension at 60°F without external load, shall not exceed the following percentages of the conductor rated breaking strength:

Initial unloaded tension	35 percent
Final unloaded tension	25 percent

Table 278-7. Minimum Conductor Sizes

Grade of Construction	Gage Size[1]
B	6
C	8

[1] For No. 6 and No. 8 medium-hard-drawn copper wire, the nominal diameters are 0.1620 and 0.1285 inches and the minimum values of breaking load are one thousand ten pounds and 643.9 pounds respectively. For steel wire gage, the nominal diameters are 0.192 inches for No. 6 and 0.162 inches for No. 8.

Note: In the case of conductors having a cross-section of a generally triangular shape, such as cables composed of three wires, the final unloaded tension at 60°F shall not exceed thirty percent of the rated breaking strength of the conductor.

Note 1: The above limitations are based on the use of recognized methods for avoiding fatigue failures by minimizing chafing and stress concentration. If such practices are not followed, lower tensions should be employed.

Note 2: The factors listed above apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions, see WAC 296-44-27809(3).

(c) Splices, taps, and dead-end fittings.

(i) Splices should be avoided in crossings and adjacent spans. If it is impractical to avoid such splices, they shall be of such a type and so made as to have a strength substantially equal to that of the conductor on which they are placed.

(ii) Taps should be avoided in crossing spans but if required shall be of a type which will not impair the strength of the conductors to which they are attached.

(iii) Dead-end fittings, including the attachment hardware, shall have sufficient strength to withstand the maximum tension resulting from the loads in WAC 296-44-26321 multiplied by an overload factor of 1.65.

(d) Trolley-contact conductors. In order to provide for wear, no trolley-contact conductor shall be installed of less size than AWG No. 0, if of copper, or AWG No. 4, if of silicon bronze.

(9) Supply cable messengers. Messengers shall be stranded and shall not be stressed beyond sixty percent of their rated breaking strength under the loadings specified in WAC 296-44-26321.

Note 1: There are no strength requirements for cables supported by messengers.

Note 2: Bonding and grounding requirements for Type 1 supply cables are in WAC 296-44-182.

Note 3: The factor in WAC 296-44-27821 (9)(a) applies for the loading conditions of WAC 296-44-26321, except when the extreme wind loading conditions, WAC 296-44-27809(3), apply.

(10) Open-wire communication conductors. Open-wire communication conductors in Grade B or C construction shall have the sizes and sags given in WAC 296-44-27821 (8)(a) and (b) for supply conductors of the same grade.

Note: When open-wire communication conductors in spans of one hundred fifty feet or less are above supply circuits of 5 kilovolts or less between conductors, Grade C sizes and sags may be replaced by Grade D sizes and sags, except that where the supply conductors are trolley-contact conductors of 0 to 750 volts to ground, WG No. 12 Stl. may be used for spans of zero to one hundred feet and WG No. 9 Stl. may be used for spans of one hundred twenty-five to one hundred fifty feet.

(11) Communication cables.

(a) Communication cables. There are no strength requirements for such cables supported by messengers.

(b) Messenger. The messenger shall not be stressed beyond sixty percent of its rated breaking strength under the loadings specified in WAC 296-44-26321.

(12) Paired communication conductors.

(a) Paired conductors supported on messenger.

(i) Use of messenger. A messenger may be used for supporting paired conductors in any location, but is only required for paired conductors crossing over trolley-contact conductors of more than 7.5 kilovolts to ground.

(ii) Sag of messenger. Messenger used for supporting paired conductors required to meet Grade B construction because of crossing over trolley-contact conductors shall meet the sag requirements for Grade D messengers.

(iii) Size and sag of conductors. There are no requirements for paired conductors when supported on messenger.

(b) Paired conductors not supported on messenger.

(i) Above supply lines.

Grade B: Sizes and sags shall be not less than those required by WAC 296-44-27821 (8)(a) and (b) for supply conductors of similar grade.

Grade C: Sizes and sags shall be not less than the following:

Spans zero to one hundred feet—No sag requirements. Each conductor shall have a rated breaking strength of not less than one hundred seventy pounds.

Spans one hundred to one hundred fifty feet—Sizes and sags shall be not less than required for Grade D communication conductors.

Spans exceeding one hundred fifty feet—Sizes and sags shall be not less than required for Grade C supply conductors. (See WAC 296-44-27821 (8)(b).)

(ii) Above trolley-contact conductors.

Grade B: Sizes and sags shall be not less than the following:

Spans zero to one hundred feet—No size requirements. Sags shall be not less than for AWG No. 8 hard-drawn copper. (See WAC 296-44-27821 (8)(b).)

Spans exceeding one hundred feet—Each conductor shall have a rated breaking strength of not less than one hundred seventy pounds.

Sags shall be not less than for AWG No. 8 hard-drawn copper. (See WAC 296-44-27821 (8)(b).)

Grade C: Sizes and sags shall be as follows:

Spans zero to one hundred feet—No requirements.

Spans exceeding one hundred feet—No sag requirements.

Each conductor shall have a rated breaking strength of not less than one hundred seventy pounds.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-27821, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-27833 Grade D construction. (1) Poles.

(a) Designated fiber stress. Natural wood poles of various species meeting the requirements of ANSI 05.1-1979 [18] shall be considered as having the designated fiber stresses set forth in that standard.

(b) Strength of unguyed poles. Unguyed poles shall withstand the vertical and transverse loads in WAC 296-44-26333 (1) and (2), and the longitudinal loads in WAC 296-44-26333 (3)(g), multiplied by the overload capacity factors given in Table 278-8 without exceeding the designated fiber stress.

(c) Strength of guyed poles. Guyed poles shall be designed as columns, resisting the vertical component of the tension in the guy plus any other vertical loads on such poles.

(d) Spliced and stub-reinforced poles. The use of stub-reinforcements or permanent splices at any section along the pole that develops the required strength of the pole is permitted, provided the remainder of the pole is in good condition and is of sufficient size to develop its required strength.

Table 278-8. Overload Capacity Factors for Unguyed Wood Poles

	Overload capacity factors
Vertical and transverse strength	
When installed	4.0
At replacement	2.67
Longitudinal strength	
When installed	1.33
At replacement	1.0

Note: The factors in this table apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions, see WAC 296-44-27809(3).

(2) Pole settings. Foundations and settings for unguyed poles shall be such as to withstand the loads assumed in WAC 296-44-26333 (1), (2) and (3).

(3) Guys.

(a) General. The general requirements for guys are covered in WAC 296-44-31729 and 296-44-31738.

(b) Side guys. Side guys or braces shall be installed on poles supporting the crossing span where required to withstand the loads specified in WAC 296-44-26333.

Note 1: Side guys are not required where the crossing poles have the transverse strength specified in WAC 296-44-27833 (1)(b) without the reduction for conductor shielding otherwise allowed in WAC 296-44-26333 (2)(a).

Note 2: Where a line crossing a railroad or highway changes direction more than ten degrees at either crossing support, the side guy within the angle may be omitted.

Note 3: This rule does not apply to crossing poles under the special conditions set forth in WAC 296-44-27833 (3)(e).

(c) Longitudinal guys. Longitudinal (head) guys shall be provided where required to meet the longitudinal strength requirements of WAC 296-44-26333.

Note: Longitudinal guys are not required where the crossing poles have the longitudinal strength specified in WAC 296-44-27833 (1)(b), or for lines carrying only aerial cable. For lines carrying both open wire and aerial cable, head guying is required only for the number of open wires in excess of ten if the cable is supported by a six thousand pound messenger, or for the number of open wires in excess of twenty if the cable is supported by a ten thousand pound or stronger messenger.

(d) Strength of guys.

(i) Guys shall be of such material and dimensions to withstand the transverse and longitudinal loads in WAC 296-44-26333, multiplied by the overload capacity factors given in Table 278-9, without exceeding ninety percent of their rated breaking strength.

(ii) At an angle in the line, the guy shall be of such material and dimension to withstand the total transverse loads in WAC 296-44-26333, multiplied by the overload capacity factors given in Table 278-10 without exceeding ninety percent of the rated breaking strength of the guy.

Table 278-9. Overload Capacity Factors for Guys

	Overload capacity factors
Transverse strength	2.67
Longitudinal strength	
In general	1.0
At dead ends	1.5

Note: The factors in the table apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions, see WAC 296-44-27809(3).

Table 278-10. Overload Capacity Factors for Guys at Angles in the Line

	Overload capacity factors Grade B
Transverse strength	
Wind load	2.67
Wire tension load	1.5

(e) Where guying is required but cannot be installed on the crossing pole. When the transverse-strength requirements cannot be met except by side-guys and it is physically impractical to employ side-guys, the transverse-strength requirements may be met by side-guying the line at each side of, and as near as is practical to, the crossing or other transversely weak structure, and with a distance between such side-guyed structures of not over eight hundred feet provided that:

(i) The side-guyed structures for each such section of eight hundred feet or less shall be constructed to withstand the calculated transverse load due to wind on the supports and ice covered conductors, on the entire section between the side-guyed structures.

(ii) The line between such side-guyed structures shall be substantially in a straight line and the average length

of span between the side-guyed structures shall not exceed one hundred fifty feet.

(iii) The entire section between the transversely strong structures shall comply with the highest grade of construction concerned in the given section, except as to the transverse strength of the intermediate structures.

(4) Crossarms.

(a) Material and minimum size. Wood crossarms of Southern pine or Douglas fir supporting the crossing span shall have a cross section not less than those shown in Table 278-11. Crossarms of other suitable timber or of other materials may be used provided they are of equivalent strength.

(b) Double crossarms. Double crossarms or a support of equivalent strength shall be used at each crossing pole.

Note: Single dead-end type crossarms may be used where it is necessary to dead-end conductors of the crossing span, provided such crossarms and associated dead-end fastenings are of sufficient size and strength to withstand the maximum tension of the conductors under the loading specified in WAC 296-44-26321 and provided further that the conductors are dead-ended on insulators so designed and installed that the conductor will not fall in the event of insulator breakage.

Table 278-11. Minimum Dimensions of Crossarm Cross Sections

Maximum number of wires to be carried	Nominal length		Cross section
	(ft)	(in)	(in)
2	1	4 1/2	2 5/16 by 3 5/16
4	3	4 1/2	2 5/16 by 3 5/16
6	6	0	2 3/4 by 3 3/4
10	8	6	2 3/4 by 3 3/4
10	10	0	3 by 4
[1]12	10	0	3 1/4 by 4 1/4
[2]16	10	0	3 1/4 by 4 1/4

[1] Where crossarms are bored for one-half inch steel pins, three inch by four and one-half inch crossarms may be used.

[2] Permitted in medium and light-loading districts only.

(5) Brackets and racks. Wood brackets may be used only in duplicate or if otherwise designed so as to afford two points of support for each conductor. Single metal brackets, racks, drive hooks or other fixtures may be used if designed and attached in such manner as to withstand the full dead-end pull of the wires supported.

(6) Pins.

(a) Strength. Insulator pins shall have sufficient strength to withstand all expected loads to which they may be subjected.

(b) Size.

(i) Wood pins. Wood pins shall be sound and straight grained with a diameter of shank not less than one and one-fourth inch.

(ii) Metal pins. Steel or iron pins shall have diameters of shank not less than one-half inch.

(7) Insulators. Each insulator shall be of such pattern, design, and material that when mounted it will withstand without injury and without being pulled off the pin, all expected loads to which they may be subjected.

(8) Conductors.

(a) Size. Conductors of the crossing span, if of hard-drawn copper or galvanized steel, shall have sizes not less than given in the specifications (i) and (ii) that follow. Conductors of material other than the above shall be of such size and so strung as to have a mechanical strength not less than that of the sizes of copper conductors given in specifications (i) and (ii) that follow.

(i) Ordinary span lengths. The sizes in Table 278-12 apply.

(ii) Long spans. If spans in excess of those specified in Table 278-12 are necessary, the size of conductors shall be increased so that the stress in the conductor will not exceed the limitations of WAC 296-44-27833 (8)(c).

(b) Paired conductors without messengers. Paired wires without a supporting messenger shall be eliminated as far as practical but where used shall meet the following requirements.

Table 278-12. Minimum Wire Sizes With Respect to Loading District and Span Length

	Spans (ft)	
Heavy-loading district	0-125	126-150
Medium-loading district	0-150	151-175
Light-loading district	0-175	176-200
	Minimum wire sizes	
Copper, hard-drawn (AWG)	10	9
Steel, galvanized (steel WG)		
In general	10	8
In rural districts of arid regions	12	10
Aluminum or copper clad steel (AWG)	10	9

(i) Strength. Each conductor shall have a rated breaking strength of one hundred seventy pounds.

(ii) Limiting span lengths. Paired wires shall not be used without a supporting messenger in spans longer than one hundred feet in the heavy loading district, one hundred twenty-five feet in the medium loading district, and one hundred fifty feet in the light loading district.

(c) Sags. Conductor sags shall be such that, under the assumed loading or WAC 296-44-26321 for the district concerned, and assuming rigid structures for the purpose of calculations, the tension of the conductor shall not be more than sixty percent of its rated breaking strength. Also the final unloaded tensions at 60°F shall not exceed twenty-five percent of the conductor rated breaking strength.

Note: The factors in WAC 296-44-27833 (8)(c) apply for the loading conditions of WAC 296-44-26309(2). For extreme wind loading conditions see WAC 296-44-27809(3).

(d) Splices and taps. Splices shall, as far as practical, be avoided in the crossing and adjacent spans. If it is impractical to avoid such splices, they shall be of such type and so made as to have a strength substantially equal to that of the conductor in which they are placed.

Taps shall be avoided in the crossing span where practical, but if required shall be of a type which will not impair the strength of the conductors to which they are attached.

(9) Messengers.

(a) Minimum size. Messengers shall be stranded material with a rated breaking strength of six thousand pounds.

(b) Sags and tensions. Multiple-conductor cables and their messengers shall be so suspended that when they are subjected to the loading prescribed in WAC 296-44-26321, the tension in the messenger shall not exceed sixty percent of its rated breaking strength.

Note: The factor in WAC 296-44-27833 (9)(b) applies for the loading conditions of WAC 296-44-26321, except for extreme windloading conditions where WAC 296-44-27809(3) applies.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-27833, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-27847 Grade N construction. (1) Poles. Poles used for lines for which neither Grade B, C, or D is required shall be of such initial size and so guyed or braced, where necessary, as to withstand all expected loads to which they may be subjected, including line personnel working on them. Such poles and stubs on highways shall be located as far as is practical from the traveled portion of highways. The number of crossings over highways should be kept to a minimum. Such poles and stubs located within falling distance of the traveled way of highways, or so located that their failure would permit wires, cables, guys, or other equipment to fall into the traveled way of the highway, or would reduce the clearances specified in Table 212-1 over the highway, shall be periodically inspected and maintained in safe condition.

(2) Guys. The general requirements for guys are covered in WAC 296-44-31729 and 296-44-31738.

(3) Crossarm strength. Crossarms shall be securely supported by bracing, if necessary, to withstand all expected loads to which they may be subjected, including line personnel working on them.

Note: Double crossarms are generally used at crossings, unbalanced corners, and dead-ends, in order to permit conductor fastenings at two insulators to prevent slipping, although single crossarms might provide sufficient strength. To secure extra strength, double crossarms are frequently used, and crossarm guys are sometimes used.

(4) Supply-line conductors.

Size. Supply-line conductors shall be not smaller than the sizes listed in Table 278-13.

RECOMMENDATION: It is recommended that these minimum sizes for copper and steel be not used in spans longer than one hundred fifty feet for the heavy-loading district, and one hundred seventy-five feet for the medium-loading and light-loading districts.

(5) Service drops.

(a) Size of open-wire service drops.

(i) Not over 750 volts. Service drops shall be as required by (1) or (2):

(A) Spans not exceeding one hundred fifty feet. Sizes shall not be smaller than those specified in Table 278-14.

Table 278-13. Grade N Minimum Sizes for Supply Line Conductors
(AWG for Copper and Aluminum; WG Stl. for Steel)

	Urban	Rural
Soft copper	6	8
Medium or hard-drawn copper	8	8
Steel	9	9
	Spans 150 feet or less	Spans exceeding 150 feet
Stranded aluminum:		
EC	4	2
ACSR	6	4
ALLOY	4	4
ACAR	4	2

(B) Spans exceeding one hundred fifty feet. Sizes shall not be smaller than required for Grade C (WAC 296-44-27821 (8)(a)).

(ii) Exceeding 750 volts. Sizes of service drops of more than 750 volts shall not be less than required for supply-line conductors of the same voltage.

(b) Tension of open-wire service drops. The tension of the service drop conductors shall not exceed the strength of the conductor attachment or its support under the expected loadings.

(c) Cabled service drops. Service conductors may be grouped together in a cable, provided the following requirements are met:

(i) Size. The size of each conductor shall not be less than required for drops of separate conductors. (WAC 296-44-27847 (5)(a).)

(ii) Tension of cabled service drops. The tension of the service drop conductors shall not exceed the strength of the conductor attachment or its support under the expected loadings.

Table 278-14. Minimum Sizes of Service Drops Carrying 750 V or Less
(Voltages of trolley-contact conductors are voltage to ground. AWG used for aluminum copper wires; Stl. WG used for steel wire)

Situation	Copper wire		Steel wire	EC aluminum wire[2]
	Soft drawn	Medium or hard drawn		
Alone	10	12	12	4
Concerned with communication conductor	10	12	12	4
Over supply conductors of 0 to 750 V	10	12	12	4
750 V to 8.7 kV[1]	8	10	12	4
Exceeding 8.7 kV[1]	6	8	9	4
Over trolley-contact conductors 0 to 750 V ac or dc	8	10	12	4
Exceeding 750 V ac or dc	6	8	9	4

[1] Installation of service drops of not more than 750 V above supply lines of more than 750 V should be avoided where practical.

[2] Where ACSR or aluminum alloy is used, the minimum size shall be No. 6 wire.

(6) Trolley-contact conductors. In order to provide for wear, no trolley-contact conductors shall be installed of less size than AWG No. 0, if of copper, or AWG No. 4, if of silicon bronze.

(7) Communication conductors. There are no specific requirements for Grade N communication line conductors or service drops.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-27847, filed 7/25/86.]

WAC 296-44-29501 Line insulation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29501, filed 7/25/86.]

WAC 296-44-29509 Application of rule. These requirements apply only to open conductor supply lines.

Note 1: See WAC 296-44-24233 (3)(f).

Note 2: See WAC 296-44-24221(5) for insulation requirements for neutral conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29509, filed 7/25/86.]

WAC 296-44-29515 Material and marking. Insulators for operation of supply circuits shall be made of wet process porcelain or other material which will provide equivalent or better electrical and mechanical performance. Insulators for use at or above 2.3 kilovolts between conductors shall be marked by the maker with his name or trademark and an identification mark or markings which will permit determination of the electrical and mechanical properties. The marking shall be applied so as not to reduce the electrical or mechanical strength of the insulator.

Note: The identifying marking can be either a catalog number, trade number, or any other means so that properties of the unit can be determined either through catalogs or other literature.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29515, filed 7/25/86.]

WAC 296-44-29523 Ratio of flashover to puncture voltage. Insulators shall be designed so that the ratio of their rated low frequency dry flashover voltage to low frequency puncture voltage is in conformance with applicable American National Standards. When a standard does not exist, this ratio shall not exceed seventy-five percent.

The applicable American National Standards are:
ANSI C29.1-1982 [9].
ANSI C29.2-1982 [10].
ANSI C29.3-1980 [11].
ANSI C29.4-1977 [12].
ANSI C29.5-1977 [13].
ANSI C29.6-1977 [14] and C29.6a-1974.
ANSI C29.7-1982 [15].

Note: Insulators specifically designed for use in areas of high atmospheric contamination may have a rated low frequency dry flashover voltage not more than eighty percent of their low frequency puncture voltage.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29523, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-29529 Insulation level. The rated dry flashover voltage of the insulator or insulators, when tested in accordance with ANSI C29.1-1982 [9] shall not be less than that shown in Table 295-1, unless based on a qualified engineering study. Higher insulation levels than those shown in Table 295-1, or other effective means, shall be used where severe lightning, high atmospheric contamination, or other unfavorable conditions exist. Insulation levels for system voltages in excess of those shown shall be based on a qualified engineering study.

Table 295-1. Insulation Level Requirements

Nominal voltage (between phases) (kV)	Minimum rated dry flashover voltage of insulators[1] (kV)	Nominal voltage (between phases) (kV)	Minimum rated dry flashover voltage of insulators[1] (kV)
0.75	5	46	125
2.4	20	69	175
6.9	39	115	315
13.2	55	138	390
23.0	75	161	445
34.5	100	230	640

[1] Interpolate for intermediate values.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29529, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-29539 Factory tests. Each insulator or insulating part thereof for use on circuits operating at or above 2.3 kilovolts between conductors shall be tested by the manufacturer in accordance with applicable American National Standards or, where such standards do not exist, other good engineering practices to assure their performance.

The applicable American National Standards are listed in WAC 296-44-29523.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29539, filed 7/25/86.]

WAC 296-44-29541 Special insulator applications. (1) Insulators for constant-current circuits. Insulators for use on constant-current circuits shall be selected on the basis of the rated full load voltage of the supply transformer.

(2) Insulators for single-phase circuits directly connected to three-phase circuits. Insulators used on single-phase circuits directly connected to three-phase circuits (without intervening isolating transformers) shall have an insulation level not less than that required for the three-phase circuit.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29541, filed 7/25/86.]

WAC 296-44-29551 Protection against arcing and other damage. In installing and maintaining insulators and conductors, precautions shall be taken to prevent as far as is practical any damage which might render the conductors or insulators liable to fall. Precautions shall also be taken to prevent, as far as is practical, any arc from forming or prevent any arc which might be formed from injuring or burning any parts of the supporting structures, insulators, or conductors.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29551, filed 7/25/86.]

WAC 296-44-29563 Mechanical strength of insulators. Insulators shall withstand all the loads specified in WAC 296-44-263 except those of WAC 296-44-26309(3) without exceeding the following percentage of their rated ultimate strength:

Cantilever	40 percent
Compression	50 percent
Tension	50 percent

Note 1: The rated ultimate mechanical strength of suspension type insulators is considered to be the rated "combined mechanical and electrical strength."

Note 2: See ANSI C29.1-1982 [9].

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29563, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-29572 Aerial cable systems. (1) Electrical requirements.

(a) Covered or insulated conductors not meeting the requirements of WAC 296-44-21209 (3)(a), (b) or (c) shall be considered as bare conductors for all insulation requirements.

(b) The insulators or insulating supports shall meet the requirements of WAC 296-44-29529.

(c) The systems shall be so designed and installed to minimize long term deterioration from electrical stress.

(2) Mechanical requirements.

(a) Insulators other than spacers used to support aerial cable systems shall meet the requirements of WAC 296-44-29563.

(b) Insulating spacers used in spacer cable systems shall withstand the loads specified in WAC 296-44-263 (except those of WAC 296-44-26309(3)) without exceeding fifty percent of their rated ultimate strength.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-29572, filed 7/25/86.]

WAC 296-44-317 Miscellaneous requirements.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-317, filed 7/25/86.]

WAC 296-44-31709 Structures for overhead lines. (1) Supporting structures.

(a) Protection of structures.

(i) Mechanical injury. Appropriate physical protection shall be provided for supporting structures subject to vehicular traffic abrasion which would materially affect their strength.

(ii) Climbing. Readily climbable supporting structures, such as closely latticed poles or towers, including those attached to bridges, carrying open supply conductors energized at more than 300 volts, which are adjacent to roads, regularly travelled pedestrian thoroughfares, or places where persons frequently gather (such as schools or public playgrounds) shall be equipped with barriers to inhibit climbing by unqualified persons or posted with appropriate warning signs.

Note: This rule does not apply where the right-of-way is fenced.

(iii) Fire. Supporting structures shall be placed and maintained so as to be exposed as little as is practical to brush, grass, rubbish, or building fires.

(iv) Attached to bridges. Supporting structures attached to bridges for the purpose of carrying open supply conductors exceeding 600 volts shall be posted with appropriate warning signs.

(b) Steps. Steps permanently installed on supporting structures shall not be closer than eight feet from the ground or other accessible surface.

Note: This rule does not apply where supporting structures are isolated.

(c) Identification. Supporting structures, including those on bridges, on which supply or communication conductors are maintained shall be so constructed, located, marked, or numbered so as to facilitate identification by employees authorized to work thereon. Date of installation of such structures should be recorded where practical by the owner.

(d) Obstructions. Signs, posters, notices, and other attachments shall not be placed on supporting structures without concurrence of the owner. Supporting structures

should be kept free from other climbing hazards such as tacks, nails, vines, and through bolts not properly trimmed.

(e) Decorative lighting. Attachment of decorative lighting on structures shall not be made without the concurrence of the owners and occupants.

(2) Unusual conductor supports. Where conductors are attached to structures other than those used solely or principally for their support, all rules shall be complied with as far as they apply. Such additional precautions as may be deemed necessary by the administrative authority shall be taken to avoid damage to the structures or injury to the persons using them. The supporting of conductors on trees and roofs should be avoided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31709, filed 7/25/86.]

WAC 296-44-31719 Tree trimming. (1) General.

(a) Trees which may interfere with ungrounded supply conductors should be trimmed or removed.

Note: Normal tree growth, the combined movement of trees and conductors under adverse weather conditions, voltage, and sagging of conductors at elevated temperatures are among the factors to be considered in determining the extent of trimming required.

(b) Where trimming or removal is not practical, the conductor should be separated from the tree with suitable materials or devices to avoid conductor damage by abrasion and grounding of the circuit through the tree.

(2) At line crossings, railroad crossings, and limited access highway crossings. The crossing span and the adjoining span on each side of the crossing should be kept free from overhanging or decayed trees or limbs which otherwise might fall into the line.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31719, filed 7/25/86.]

WAC 296-44-31729 Guying and bracing. (1) Where used. When the loads to be imposed on supporting structures are greater than can be safely supported by the structures alone, additional strength shall be provided by the use of guys, braces, or other suitable construction. Such measures shall also be used where necessary to prevent undue increase of sags in adjacent spans as well as to provide sufficient strength for those supports on which the loads are considerably unbalanced, for example, at corners, angles, dead ends, large differences in span lengths, and changes of grade of construction.

(2) Strength. The strength of the guy or brace shall meet the requirements of WAC 296-44-278 for the applicable grade of construction. For guy wires conforming to ANSI/ASTM Standards, the minimum breaking strength value therein defined shall be the rated breaking strength required in this code.

(3) Point of attachment. The guy or brace should be attached to the structure as near as is practical to the center of the conductor load to be sustained. However, on lines exceeding 8.7 kilovolts the location of the guy or brace may be adjusted to minimize the reduction of the insulation offered by nonmetallic support arms and supporting structures.

(4) Guy fastenings. Guys having an ultimate strength of two thousand pounds or more and subject to small radius bends should be stranded and should be protected by suitable guy thimbles or their equivalent. Cedar and other softwood poles around which any guy having an ultimate strength of ten thousand pounds or more is wrapped should be protected by the use of suitable guy shims.

Where there is a tendency for the guy to slip off the shim, guy hooks or other suitable means of preventing this action should be used. Shims are not necessary in the case of supplementary guys, such as storm guys.

(5) Guy markers (guy guards). The ground end of anchor guys, exposed to pedestrian traffic, shall be provided with a substantial and conspicuous marker not less than eight feet long.

Note: Visibility of markers can be improved by the use of color or color patterns which provide contrast with the surroundings.

(6) Electrolysis. Where anchors and rods are subject to electrolysis, suitable measures should be taken to minimize corrosion from this source.

(7) Anchor rods.

(a) Anchor rods should be installed so as to be in line with the pull of the attached guy when under load.

Note: This is not required for anchor rods installed in rock or concrete.

(b) The anchor rod assembly shall have an ultimate strength not less than that required of the guy.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31729, filed 7/25/86.]

WAC 296-44-31738 Insulators in guys attached to supporting structures. (1) Properties of guy insulators.

(a) Material. Insulators shall be made of wet process porcelain, wood, glass fiber, reinforced plastic or other material of suitable mechanical and electrical properties.

(b) Electrical strength. The guy insulator shall have a rated dry flashover voltage at least double the nominal line voltage and a rated wet flashover voltage at least as high as the nominal line voltage between conductors of the guyed circuit. A guy insulator may consist of one or more units.

(c) Mechanical strength. The rated ultimate strength of the guy insulator shall be at least equal to the rated breaking strength of the guy in which it is installed.

(2) Use of guy insulators.

(a) Ungrounded guys attached to supporting structures carrying open supply conductors of more than 300 volts, or if exposed to such conductors, shall be insulated.

Note: Guys grounded in accordance with WAC 296-44-18261 (3)(b) need not be insulated.

Note: A guy insulator is not required if the guy is attached to a supporting structure on private right-of-way if all the supply circuits exceeding 300 volts meet the requirements of WAC 296-44-19409 (2)(b).

(b) Insulators shall be installed as follows:

(i) All insulators shall be located at least eight feet above the ground.

(ii) Where hazard would exist with one insulator, two or more guy insulators shall be placed so as to include, in so far as is practical, the exposed section of the guy between them.

(iii) Insulators shall be so placed that in case any guy sags down upon another, the insulators will not become ineffective.

(3) Corrosion protection. An insulator in the guy strand used exclusively for the elimination of corrosion of metal in ground rods, anchors, anchor rods, or pipe in an effectively grounded system, shall not be classified as a guy insulator and shall not reduce the mechanical strength of the guy.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31738, filed 7/25/86.]

WAC 296-44-31749 Span-wire insulators. (1) Properties of span-wire insulators.

(a) Material. Insulators shall be made of wet process porcelain, wood, fiberglass, or other material of suitable mechanical and electrical properties.

(b) Insulation level. The insulation level of span-wire insulators shall meet the requirements of WAC 296-44-29539.

A hanger insulator, where used to provide single insulation as permitted by subsection (2) of this section shall meet the requirements of WAC 296-44-29539.

(c) Mechanical strength. The rated ultimate strength of the span-wire insulator shall be at least equal to the rated breaking strength of the span-wire in which it is installed.

(2) Use of span-wire insulators.

(a) All span-wires, including bracket span-wires, shall have a suitable insulator (in addition to an insulated hanger if used) inserted between each point of support of the span-wire and the luminaire or trolley-contact conductor supported.

Note 1: Single insulation, as provided by an insulated hanger, may be permitted when the span-wire or bracket is supported on wood poles supporting only trolley, railway feeder, or communication conductors used in the operation of the railway concerned.

Note 2: Insulators are not required if the span-wire is effectively grounded.

Note 3: This rule does not apply to insulated feeder taps used as span-wires.

(b) In case insulated hangers are not used, the insulator shall be located so that in the event of a broken wire the energized part of the span-wire cannot be reached from the ground.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31749, filed 7/25/86.]

WAC 296-44-31757 Overhead conductors. (1) Identification. All conductors of electric-supply and communication lines should, as far as is practical, be arranged to occupy uniform positions throughout, or shall be constructed, located, marked, numbered, or attached to distinctive insulators or crossarms, so as to facilitate identification by employees authorized to work thereon. This does not prohibit systematic transposition of conductors.

(2) Branch connections.

(a) Connections to circuits, service loops, and equipment in overhead construction shall be accessible to authorized employees.

(b) Connections shall be supported and placed so that swinging or sagging cannot bring them in contact with other conductors or interfere with the safe use of pole steps, or reduce the climbing or lateral working space.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31757, filed 7/25/86.]

WAC 296-44-31765 Equipment on supporting structures. (1) Identification. All equipment of electric-supply and communication lines should be arranged to occupy uniform positions throughout or shall be constructed, located, marked, or numbered so as to facilitate identification by employees authorized to work thereon.

(2) Location. All supply and communication equipment such as transformers, regulators, capacitors, amplifiers, loading coils, surge arresters, switches, etc., when located below conductors or other attachments, shall be mounted outside of the climbing space required in WAC 296-44-212.

(3) Guarding. Exposed energized parts of equipment such as switches, circuit breakers, surge arresters, etc., shall be enclosed or guarded if all of the following conditions apply:

(a) The equipment is located below the top conductor support.

(b) The equipment is located on the climbing side of the structure.

(4) Clearance above ground. Equipment shall be mounted at not less than the following heights above ground, measured to the lower projection of such equipment:

(a) Equipment cases which are effectively grounded, or ungrounded cases which contain equipment connected to circuits of nor more than 150 volts:

Over traveled portions of roadway	16 feet
Over shoulder of roadway	15 feet
Over walkways	10 feet

Note 1: The bottom of the housing of traffic control signals suspended over the traveled portion of the roadway shall be not less than fifteen feet nor more than nineteen feet above the grade at the center of the roadway.

Note 2: Effectively grounded equipment cases such as fire alarm boxes, traffic control boxes, or meters may be mounted over a walkway at a lower level for accessibility provided such equipment does not unduly obstruct the walkway.

(b) Ungrounded equipment cases which contain equipment connected to circuits of more than 150 volts shall have the same clearances above ground as specified for rigid live parts in WAC 296-44-21230(3).

(5) Clearances from buildings, bridges, or other structures.

(a) Effectively grounded equipment cases may be located on or adjacent to buildings, bridges, or other structures provided that all exposed live parts of such

equipment are located so that the clearances for open supply line conductors as specified in WAC 296-44-21253 (3), (4) and (6) are maintained.

(b) Equipment cases which are not effectively grounded shall be located so that the clearances for open supply line conductors of WAC 296-44-21253 (3), (4) and (6) are maintained.

(c) Equipment cases shall be located so as not to serve as a means of approach to exposed live parts by unqualified persons.

(6) Street and area lighting.

(a) All exposed ungrounded conductive parts of luminaires and their supports which are not insulated from current-carrying parts shall be maintained at not less than twenty inches from the surface of their supporting structure:

Note 1: This may be reduced to five inches if located on the side of the structure opposite the designated climbing space.

Note 2: This does not apply where the equipment is located at the top or other vertical portion of the structure which is not subject to climbing.

(b) The lowering rope or chain for luminaires arranged to be lowered for examination or maintenance shall be of a material and strength designed to withstand climatic conditions and to sustain the luminaire safely. The lowering rope or chain, its supports, and fastenings shall be examined periodically.

(c) Insulators, as specified in WAC 296-44-31738(1), should be inserted at least eight feet from the ground in metallic suspension ropes or chains supporting lighting units of series circuits.

(d) A suitable device shall be provided by which each lamp on series lighting circuits of more than 300 volts may be safely disconnected from the circuit before the lamp is handled.

Note: This rule does not apply where the lamps are always worked on from suitable insulated platforms or aerial lift devices, or handled with suitable insulated tools, and treated as under full voltage of the circuit concerned.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31765, filed 7/25/86.]

WAC 296-44-31772 Communications protective requirements. (1) Where required. Where communications apparatus is handled by other than qualified persons, it shall be protected by one or more of the means listed in subsection (2) of this section if such apparatus is permanently connected to lines subject to any of the following:

(a) Lightning.

(b) Possible contact with supply conductors whose voltage to ground exceeds 300 volts.

(c) Transient rise in ground potential exceeding 300 volts.

(d) Steady state induced voltage of a hazardous level.

Note: When communications cables will be in the vicinity of supply stations where large ground currents may flow, the effect of these currents on communications circuits should be evaluated.

(2) Means of protection. Where communications apparatus is required to be protected under subsection (1) of this section protective means adequate to withstand the voltage expected to be impressed shall be provided by insulation, protected where necessary by arresters used in conjunction with fusible elements. Severe conditions may require the use of additional devices such as auxiliary arresters, drainage coils, neutralizing transformers, or isolating devices.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31772, filed 7/25/86.]

WAC 296-44-31783 Circuits of one class used exclusively in the operation of circuits of another class. (1) Overhead communication circuits used exclusively in the operation of supply circuits.

(a) Communication circuits used exclusively in the operation of supply lines may be run either as ordinary communication circuits or as supply circuits under the conditions specified in (c) and (d) of this subsection, respectively. After the selection of the type of communication circuit construction and protection for a section, such construction and protection shall be consistently adhered to throughout the extent of such section of the communication system.

(b) Communication circuits used in operation of supply lines shall be isolated or guarded at all points so as to be inaccessible to the public.

(c) Communication circuits used in the operation of supply lines may be run as ordinary communication conductors under the following conditions:

(i) Where such circuits are below supply conductors in the operation of which they are used (including high-voltage trolley feeders) at crossings, conflicts, or on commonly used poles, provided:

(A) Such communication circuits occupy a position below all other supply conductors or equipment at crossings, conflicts, or on commonly used poles.

(B) Such communication circuits and their connected equipment are adequately guarded and are accessible only to authorized persons.

(ii) Where such circuits are below supply conductors in the operation of which they are used and are above other supply or communication conductors at wire crossings, conflicts, or on the same poles, provided the communication circuits are protected by fuseless surge arresters, drainage coils, or other suitable devices to prevent the communication circuit voltage from normally exceeding 400 volts to ground.

Note: The grades of construction for communication conductors with inverted levels apply.

(d) Communication circuits used in the operation of supply lines shall comply with all requirements for the supply lines with which they are used, where they do not comply with the provisions of (c)(i) or (ii) of this subsection.

Note 1: If the voltage of the supply conductors concerned exceeds 8.7 kilovolts, the communication conductors need only meet the requirements for supply conductors of 5 to 8.7 kilovolts.

Note 2: Where the supply conductors are required to meet Grade C, the size of the communication conductors may be the same as for Grade D (see WAC 296-44-27833 (9)(b)) for spans up to one hundred fifty feet.

(2) Supply circuits used exclusively in the operation of communication circuits. Circuits used for supplying power solely to apparatus forming part of a communications system shall be installed as follows:

(a) Open wire circuits shall have the grades of construction, clearances, insulation, etc., prescribed elsewhere in these rules for supply or communication circuits of the voltage concerned.

(b) Special circuits operating at voltages in excess of 400 volts to ground and used for supplying power solely to communications equipment may be included in communications cables under the following conditions:

(i) Such cables shall have a conductive sheath or shield which is effectively grounded and each such circuit shall be carried on conductors which are individually enclosed with an effectively grounded shield.

(ii) All circuits in such cables shall be owned or operated by one party and shall be maintained only by qualified personnel.

(iii) Supply circuits included in such cables shall be terminated at points accessible only to qualified personnel.

(iv) Communications circuits brought out of such cables, if they do not terminate in a repeater station or terminal office, shall be protected or arranged so that in the event of failure within the cable, the voltage on the communication circuit will not exceed 400 volts to ground.

(v) Terminal apparatus for the power supply shall be so arranged that the live parts are inaccessible when such supply circuits are energized.

Note: The requirements of this section do not apply to the supply circuits of 600 volts or less where the transmitted power does not exceed 5 kilowatts and the installation complies with WAC 296-44-19409 (2)(b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31783, filed 7/25/86.]

WAC 296-44-31792 Electric railway construction. (1) Trolley-contact conductor fastenings. All overhead trolley-contact conductors shall be supported and arranged so that the breaking of a single contact conductor fastening will not allow the trolley conductor live span-wire, or current-carrying connection to come within ten feet (measured vertically) from the ground, or from any platform accessible to the general public.

Span-wire insulation for trolley-contact conductors shall comply with WAC 296-44-31749.

(2) High voltage contact conductors. Trolley-contact conductors energized at more than 750 volts shall be suspended so as to minimize the possibility of a break, and in such a way that, if broken at one point, the conductor will not come within twelve feet (measured vertically) of the ground, or any platform accessible to the public.

(3) Third rails. Third rails shall be protected by adequate guards composed of wood or other suitable insulating material.

Note: This rule does not apply where third rails are on fenced right-of-way.

(4) Prevention of loss of contact at railroad crossings at grade. At crossings at grade with other railroads or other electrified railway systems, contact conductors shall be arranged as set forth in specifications of (a), (b), (c), and (d) of this subsection, whichever apply:

(a) Where the crossing span exceeds one hundred feet catenary construction shall be used for overhead trolley-contact conductors.

(b) When pole trolleys, using either wheels or sliding shoes, are used:

(i) The trolley-contact conductor shall be provided with live trolley guards of suitable construction; or

(ii) The trolley-contact conductor should be at a uniform height above its own track throughout the crossing span and the next adjoining spans. Where it is not practical to maintain a uniform height, the change in height shall be made in a gradual manner.

Note: (b) of this subsection does not apply where the crossing is protected by signals or interlocking.

(c) When pantograph type collectors are used, the contact conductor and track through the crossing should be maintained in a condition where rocking of pantograph-equipped cars or locomotives will not de-wire the pantograph. If this cannot be done, auxiliary contact conductors shall be installed. Wire height shall conform with (b) of this subsection.

(d) Where two electrified tracks cross:

(i) When the trolley-contact conductors are energized from different supply circuits, or from different phases of the same circuit, the trolley-conductor crossover shall be designed to insulate both conductors from each other. The design shall not permit either trolley collector to contact any conductor or part energized at a different voltage than at which it is designed to operate.

(ii) Trolley-contact crossovers used to insulate trolley conductors of the same voltage but of different circuit sections shall be designed to prevent both sections being simultaneously contacted by the trolley collector.

(e) When third rail construction is used, and the length of the third rail gap at the crossings is such that a car or locomotive stopping on the crossing can lose propulsion power, the crossing shall be protected by signals or interlocking.

(5) Guards under bridges. Trolley guards of suitable construction shall be provided where the trolley-contact conductor is so located that a trolley pole leaving the conductor can make simultaneous contact between it and the bridge structure.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-31792, filed 7/25/86.]

PART G--INSTALLATION, MAINTENANCE OF UNDERGROUND ELECTRIC SUPPLY AND COMMUNICATION LINES

WAC 296-44-350 Safety rules for the installation and maintenance of underground electric-supply and communication lines.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-350, filed 7/25/86.]

WAC 296-44-35009 Purpose. The purpose of WAC 296-44-350 through 296-44-49121 is the practical safeguarding of persons during the installation, operation, or maintenance of underground or buried supply and communication cables and associated equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-35009, filed 7/25/86.]

WAC 296-44-35021 Scope. WAC 296-44-350 through 296-44-49121 cover supply and communication cables and equipment in underground or buried systems. The rules cover the associated structural arrangements and the extension of such systems into buildings. It also covers the cables and equipment employed primarily for the utilization of electric power when such cables and equipment are used by the utility in the exercise of its function as a utility. They do not cover installations in electric supply stations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-35021, filed 7/25/86.]

WAC 296-44-365 General requirements applying to underground lines. The introduction WAC 296-44-005, 296-44-013 and 296-44-016 definitions WAC 296-44-011, list of referenced documents WAC 296-44-017, and grounding methods WAC 296-44-023 shall apply to the requirements of WAC 296-44-350 through 296-44-49121.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-365, filed 7/25/86.]

WAC 296-44-36518 Installation and maintenance. (1) Persons responsible for underground facilities shall be in a position to indicate the location of their facilities.

(2) Reasonable advance notice should be given to owners or operators of other proximate facilities which may be adversely affected by new construction or changes in existing facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36518, filed 7/25/86.]

WAC 296-44-36527 Accessibility. All parts which must be examined or adjusted during operation shall be arranged so as to be readily accessible to authorized persons by the provision of adequate working spaces, working facilities, and clearances.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36527, filed 7/25/86.]

WAC 296-44-36539 Inspection and tests of lines and equipment. (1) When in service.

(a) Initial compliance with safety rules. Lines and equipment shall comply with these safety rules upon being placed in service.

(b) Inspection. Accessible lines and equipment shall be inspected by the responsible party at such intervals as experience has shown to be necessary.

(c) Tests. When considered necessary, lines and equipment shall be subjected to practical tests to determine required maintenance.

(d) Record of defects. Any defects affecting compliance with this code revealed by inspection, if not promptly corrected, shall be recorded; such record shall be maintained until the defects are corrected.

(e) Remedying defects. Lines and equipment with recorded defects which would endanger life or property, shall be properly repaired, disconnected, or isolated.

(2) When out of service.

(a) Lines infrequently used. Lines and equipment infrequently used shall be inspected or tested as necessary before being placed into service.

(b) Lines temporarily out of service. Lines and equipment temporarily out of service shall be maintained in a safe condition.

(c) Lines permanently abandoned. Lines and equipment permanently abandoned shall be removed or maintained in a safe condition.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36539, filed 7/25/86.]

WAC 296-44-36551 Grounding of circuits and equipment. (1) Methods. The methods to be used for grounding of circuits and equipment are given in WAC 296-44-023.

(2) Conductive parts to be grounded. Cable sheaths and shields (except conductor shields), equipment frames and cases (including pad-mounted devices), and conductive lighting poles shall be effectively grounded. Ducts and riser guards of conductive material which enclose electric supply lines shall be effectively grounded.

Note: This rule does not apply to parts which are eight feet or more above readily accessible surfaces or are otherwise isolated or guarded.

(3) Use of earth as part of circuit. Supply circuits shall not be designed to use the earth normally as the sole conductor for any part of the circuit.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36551, filed 7/25/86.]

WAC 296-44-36563 Communication protective requirements. (1) Where required. Where communications apparatus is handled by other than qualified persons, it shall be protected by one or more of the means listed in subsection (2) of this section if such apparatus is permanently connected to lines subject to any of the following:

(a) Lightning.

(b) Possible contact with supply conductors whose voltage exceeds 300 V.

(c) Transient rise in ground potential exceeding 300 V.

(d) Steady-state induced voltage of a hazardous level.

Note: When communications cables will be in the vicinity of supply stations where large ground currents may flow, the effect of these currents on communications circuits should be evaluated.

(2) Means of protection. Where communications apparatus is required to be protected under subsection (1) of this section, protective means adequate to withstand the voltage expected to be impressed shall be provided by insulation, protected where necessary by arresters.

Severe conditions may require the use of additional devices such as auxiliary arresters, drainage coils, neutralizing transformers, or isolating devices.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36563, filed 7/25/86.]

WAC 296-44-36575 Induced voltage. Rules covering supply line influence and communication line susceptiveness have not been detailed in this code. Cooperative procedures are recommended to minimize steady state voltages induced from proximate facilities. Therefore, reasonable advance notice should be given to owners or operators of other known proximate facilities which may be adversely affected by new construction or changes in existing facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-36575, filed 7/25/86.]

WAC 296-44-370 Strength requirements--Grade N construction. (1) **Poles and towers.** Poles used for lines for which neither Grade B, C or D is required shall be of such initial size and so guyed or braced, where necessary, as to withstand safely the loads to which they may be subjected, including linemen working on them. Such poles and stubs on state and federal highways shall be located as far as practicable from the traveled portion of such highways. The number of crossings over such highways should be kept to a minimum. Such poles and stubs located within falling distance of the traveled portion of such highways, or so located that their failure would permit wires, cables, guys, or other equipment to fall into the traveled portion of the highway, or would reduce the clearances specified in Table 1 over the traveled portion of such highways, shall be periodically inspected and maintained in safe condition.

(2) **Guys.** The general requirements for guys are covered under "miscellaneous requirements" (WAC 296-44-400 through 296-44-427).

(3) **Crossarm strength.** Crossarms shall be securely supported, by bracing if necessary, so as to support safety loads to which they may be subjected in use, including linemen working on them. Any crossarm, or buckarm, shall be capable of supporting a vertical load of 225 pounds at either extremity, in addition to the weight of the conductors.

Note: Double crossarms are generally used at crossings, unbalanced corners, and dead-ends, in order to permit conductor fastenings at two insulators, and so prevent slipping, although single crossarms might provide sufficient strength. To secure extra strength, double crossarms are frequently used, and crossarm guys are sometimes used.

(4) **Supply-line conductors.**

(a) Material. All supply-line conductors shall be of material or combinations of materials which will not corrode excessively under the prevailing conditions.

(b) Size. Supply-line conductors shall be not smaller than the following:

Table 27.—Grade N minimum sizes for supply-line conductors

(AWG for copper and aluminum; Stl. WG for steel)

	Urban	Rural
Soft copper	6	8
Medium or hard-drawn copper	8	8
Steel	9	9

	Urban and rural	
	Spans 150 feet or less	Spans exceeding 150 feet
Stranded aluminum:		
Not reinforced	1	0
Steel-reinforced	6	4

RECOMMENDATION: It is recommended that, except as modified in WAC 296-44-364(6)(b), these minimum sizes for copper and steel not to be used in spans longer than 150 feet for the heavy-loading district, and 175 feet for the medium and light-loading districts.

(5) **Supply services.**

(a) Material. All supply service conductors shall be of material or combinations of materials which will not corrode excessively under the prevailing conditions.

(b) Size of open-wire services.

(i) Not over 750 volts between conductors. Supply-service leads of not over 750 volts between conductors shall be not smaller than required by (A) or (B) below:

(A) Spans not exceeding 150 feet. Sizes shall be not smaller than specified in Table 28.

Table 28.—Minimum sizes of service leads carrying 750 volts or less

(All voltages are between conductors except trolley-contact conductors where voltages are to ground)

(AWG for copper; Stl. WG for steel)

Situation	Copper wire		Steel wire
	Soft-drawn	Medium or hard-drawn	
Alone	10	12	12
Concerned with communication conductors	10	12	12
Over supply conductors of—			
0 to 750 volts	10	12	12
750 to 8,700 volts[1]	8	10	12
Exceeding 8,700 volts[1]	6	8	9
Over trolley-contact conductors—			
0 to 750 volts ac or dc	8	10	12
Exceeding 750 volts ac or dc	6	8	9

[1]Installation of service leads of not more than 750 volts above supply lines of more than 750 volts should be avoided where practicable.

(B) Spans exceeding 150 feet. Sizes shall be not smaller than required for Grade C. (WAC 296-44-364 (6)(b).)

(ii) Exceeding 750 volts between conductors. Sizes of supply-service leads of more than 750 volts between

conductors shall be not less than required for supply-line conductors of the same voltage.

(c) Sag, open-wire services.

(i) Not over 750 volts between conductors. Supply service leads of not over 750 volts between conductors shall have sags not less than shown in Table 29.

Table 29.—Sags for open-wire services

Span lengths	Sag
Feet	Inches
100 or less	12.
100 to 125	18.
125 to 150	27.
Exceeding 150	Grade C sags.

(ii) Exceeding 750 volts between conductors. Supply service leads of more than 750 volts between conductors shall comply as to sags with the requirements for supply line conductors of the same voltage.

(d) Cabled services. Supply service leads may be grouped together in a cable, provided the following requirements are met:

(i) Size. The size of each conductor shall be not less than required for leads of separate conductors (subsection (5)(b)).

(ii) Sag. The sag of the cable should be not less than required for leads of separate conductors (subsection (5)(c)).

(iii) Insulation. The insulation should be sufficient to withstand twice the normal operating voltage.

(6) **Lightning-protection wires.** Lightning-protection wires paralleling the line conductors shall be regarded, in respect to size and material requirements, as supply conductors.

(7) **Trolley-contact conductors.** In order to provide for wear, no trolley-contact conductors shall be installed of less size than No. 0, if of copper, or No. 4, if of silicon bronze.

(8) **Cradles at supply-line crossing.** Cradles should not be used.

Note: It is less expensive and better to build the supply line strong enough to withstand extreme conditions than to build a cradle of sufficient strength to catch and hold the supply line if it falls.

(9) **Communication conductors.** There are no specific requirements for Grade N communication line conductors or service drops.

[§ 26 (part), filed 3/23/60, effective 12/1/58.]

WAC 296-44-386 Underground conduit systems.

Note: While it is often the practice to use duct and conduit interchangeably, duct, as used herein, is a single enclosed raceway for conductors or cable; conduit is a structure containing one or more ducts; and conduit system is the combination of conduit, conduits, manholes, handholes, and/or vaults joined to form an integrated whole.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-386, filed 7/25/86.]

WAC 296-44-38609 Location. (1) Routing.

(a) General.

(i) Conduit systems should be subject to the least disturbance practical. Conduit systems extending parallel to other subsurface structures should not be located directly over or under other subsurface structures. If this is not practical, the rule on clearances, as stated in subsection (2) of this section, should be followed.

(ii) Conduit alignment should be such that there are no protrusions which would be harmful to the cable.

(iii) When bends are required, the minimum radius shall be sufficiently large to prevent damage to cable being installed in the conduit.

RECOMMENDATION: The maximum change of direction in any plane between lengths of straight rigid conduit without the use of bends should be limited to 5°.

(b) Natural hazards. Routes through unstable soils such as mud, shifting soil, etc., or through highly corrosive soils, should be avoided. If construction is required in these soils, the conduit should be constructed in such a manner as to minimize movement and/or corrosion or both.

(c) Highways and streets. When conduit must be installed longitudinally under the roadway, it should be installed in the shoulder or, to the extent practical, within the limits of one lane of traffic.

(d) Bridges and tunnels. The conduit system shall be located so as to minimize the possibility of damage by traffic. It should be located to provide safe access for inspection or maintenance of both the structure and the conduit system.

(e) Crossing railroad tracks.

(i) The top of the conduit system should be located not less than thirty-six inches below the top of the rails of a street railway or fifty inches below the top of the rails of a railroad. Where unusual conditions exist or where proposed construction would interfere with existing installations, a greater depth then specified above may be required.

Note: Where this is impractical, or for other reasons, this clearance may be reduced by agreement between the parties concerned. In no case, however, shall the top of the conduit or any conduit protection extend higher than the bottom of the ballast section which is subject to working or cleaning.

(ii) At crossings under railroads, manholes, handholes, and vaults should not, where practical, be located in the roadbed.

(f) Submarine crossing. Submarine crossings should be routed, installed, or both so they will be protected from erosion by tidal action or currents. They should not be located where ships normally anchor.

(2) Clearances from other underground installations.

(a) General. The clearance between a conduit system and other underground structures paralleling it should be as large as necessary to permit maintenance of the system without damage to the paralleling structures. A conduit which crosses over another subsurface structure shall have a minimum clearance sufficient to prevent damage to either structure. These clearances should be determined by the parties involved.

Note: When conduit crosses a manhole, vault, or subway tunnel roof, it may be supported directly on the roof with the concurrence of all parties involved.

(b) Separations between supply and communications conduit systems. Conduit systems to be occupied by communications conductors shall be separated from conduit systems to be used for supply systems by:

(i) Three inches of concrete.

(ii) Four inches of masonry.

(iii) Twelve inches of well tamped earth.

Note: Lesser separations may be used where the parties concur.

(c) Sewers, sanitary and storm.

(i) If conditions require a conduit to be installed parallel to and directly over a sanitary or storm sewer, it may be done provided both parties are in agreement as to the method.

(ii) Where a conduit run crosses a sewer it shall be designed to have suitable support on each side of the sewer to prevent transferring any direct load onto the sewer.

(d) Water lines. Conduit should be installed as far as is practical from a water main in order to protect it from being undermined if the main breaks. Conduit which crosses over a water main shall be designed to have suitable support on each side as required to prevent transferring any direct loads onto the main.

(e) Fuel lines. Conduit should have sufficient clearance from fuel lines to permit the use of pipe maintenance equipment. Conduit and fuel lines shall not enter the same manhole.

(f) Steam lines. Conduit should be so installed as to prevent detrimental heat transfer between the steam and conduit systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-38609, filed 7/25/86.]

WAC 296-44-38628 Excavation and backfill. (1) Trench. The bottom of the trench should be undisturbed, tamped, or relatively smooth earth. Where the excavation is in rock, the conduit should be laid on a protective layer of clean tamped backfill.

(2) Quality of backfill. All backfill should be free of materials that may damage the conduit system.

RECOMMENDATION: Backfill within six inches of the conduit should be free of solid material greater than four inches in maximum dimension or with sharp edges likely to damage it. The balance of backfill should be free of solid material greater than eight inches in maximum dimension. Backfill material should be adequately compacted.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-38628, filed 7/25/86.]

WAC 296-44-38641 Ducts and joints. (1) General.

(a) Duct material shall be corrosion resistant and suitable for the intended environment.

(b) Duct materials, the construction of the conduit, or both shall be designed so that a cable fault in one duct would not damage the conduit to such an extent that it would cause damage to cables in adjacent ducts.

(c) The conduit system shall be designed to withstand external forces to which it may be subjected by the surface loadings set forth in WAC 296-44-38653(1) except that impact loading may be reduced one-third for each foot of cover so no impact loading need be considered when cover is three feet or more.

(d) The internal finish of the duct shall be free of sharp edges or burrs which could damage supply cable.

(2) Installation.

(a) Restraint. Conduit, including terminations and bends, should be suitably restrained by backfill, concrete envelope, anchors, or other means to maintain its design position under stress of installation procedures, cable pulling operations, and other conditions such as settling and hydraulic or frost uplift.

(b) Joints. Ducts shall be joined in a manner sufficient to prevent solid matter from entering the conduit line. Joints shall form a sufficiently continuous smooth interior surface between joining duct sections so that supply cable will not be damaged when pulled past the joint.

(c) Externally coated pipe. When conditions are such that externally coated pipe is required, the coating shall be corrosion resistant and should be inspected, tested, or both, to see that the coating is continuous and intact prior to backfill. Precautions shall be taken to prevent damage to the coating when backfilling.

(d) Building walls. Conduit installed through a building wall shall have internal and external seals intended to prevent the entrance of gas into the building insofar as practical. The use of seals may be supplemented by gas venting devices in order to minimize building up of positive gas pressures in the conduit.

(e) Bridges.

(i) Conduit installed in bridges shall include the capability to allow for expansion and contraction of the bridge.

(ii) Conduits passing through a bridge abutment should be installed so as to avoid or resist any shear due to soil settlement.

(iii) Conduit of conductive material installed on bridges shall be effectively grounded.

(f) In vicinity of manholes. Conduit should be installed on compacted soil or otherwise supported when entering a manhole to prevent shear stress on the conduit at the point of manhole entrance.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-38641, filed 7/25/86.]

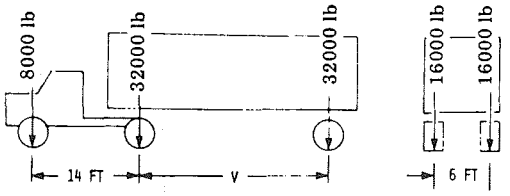
WAC 296-44-38653 Manholes, handholes and vaults. (1) Strength. Manholes, handholes, and vaults shall be designed to sustain all expected loads which may be imposed upon the structure. The horizontal design loads, vertical design loads, or both shall consist of dead load, live load, equipment load, impact, load due to water table, frost, and any other load expected to be imposed upon the structure, to occur adjacent to the structure, or both. The structure shall sustain the combination of vertical and lateral loading that produces the maximum shear and bending moments in the structure.

(a) In roadway areas, the live load shall consist of the weight of a moving tractor–semitrailer truck illustrated in Figure 386–1. The vehicle wheel load shall be considered applied to an area as indicated in Figure 386–2. In the case of multilane pavements, the structure shall sustain the combination of loadings which result in vertical and lateral structure loadings which produce the maximum shear and bending moments in the structure.

Note: Loads imposed by equipment used in road construction may exceed loads to which the completed road may be subjected.

(b) In designing structures not subject to vehicular loading, the minimum live load shall be three hundred pounds per square foot.

(c) Live loads shall be increased by thirty percent for impact.



V = Variable spacing, 14 ft to 30 ft (4.3 m to 9.0 m) inclusive. Spacing to be used is that which results in vertical and lateral structure loading which produces the maximum shear and bending moments in the structure.

Fig. 386-1

Roadway Vehicle Load

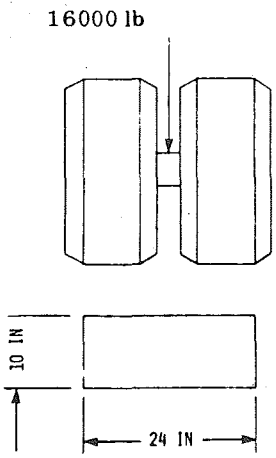


Fig. 386-2

Wheel Load Area

(d) When hydraulic, frost, or other uplift will be encountered, the structure shall either be of sufficient weight or so restrained as to withstand this force. The weight of equipment installed in the structure is not to be considered as part of the structure weight.

(e) Where pulling iron facilities are furnished, they should be installed with a factor of safety of 2 based on the expected load to be applied to the pulling iron.

(2) Dimensions. Manholes shall meet the following requirements: A clear working space sufficient for performing the necessary work shall be maintained. The horizontal dimensions of the clear working space shall be not less than three feet. The vertical dimensions shall be not less than six feet except in manholes where the opening is within one foot horizontally, of the adjacent interior side wall of the manhole.

Note 1: Where one boundary of the working space is an unoccupied wall and the opposite boundary consists of cables only, the horizontal working space between these boundaries may be reduced to thirty inches.

Note 2: In manholes containing only communications cables, equipment, or both, one horizontal dimension of the working space may be reduced to not less than two feet provided the other horizontal dimension is increased so that the sum of the two dimensions is at least six feet.

(3) Manhole access openings.

(a) Round access openings in a manhole containing supply cables shall be not less than twenty–six inches in diameter. Round access openings in any manhole containing communication cables only, or manholes containing supply cables and having a fixed ladder which does not obstruct the opening, shall be not less than twenty–four inches in diameter. Rectangular access openings should have dimensions not less than twenty–six inches by twenty–two inches.

(b) Openings shall be free of protrusions which will injure personnel or prevent quick egress.

(4) Covers.

(a) Manholes and handholes, when not being worked in, shall be securely closed by covers of sufficient weight or proper design so they cannot be easily removed without tools.

(b) Covers should be suitable designed or restrained so that they cannot fall into manholes or protrude into manholes sufficiently far to contact cable or equipment.

(c) Strength of covers and their supporting structure shall be at least sufficient to sustain the applicable loads of subsection (1) of this section.

(5) Access.

(a) Vault or manhole openings shall be located so that safe access can be provided. When in the highway, they should be located outside of the paved roadway when practical. They should be located outside the area of street intersections and crosswalks whenever practical to reduce the traffic hazards to the men working at these locations.

(b)(i) Personnel access openings in vaults or manholes should be located so that they are not directly over the cable or equipment. Where these openings interfere with curbs, etc., they can be located over the cable if one of the following is provided:

(A) A conspicuous warning sign.

(B) A protective barrier over the cable.

(C) A fixed ladder.

(ii) In vaults, other types of openings may be located over equipment to facilitate work on this equipment.

(6) Access doors.

(a) Where accessible to the public, access doors to utility tunnels and vaults shall be locked unless qualified persons are in attendance to prevent entry by unqualified persons.

(b) Such doors shall be designed so that a person on the inside may exit when the door is locked from the outside.

Note: This rule does not apply where the only means of locking is by padlock and the latching system is so arranged that the padlock can be closed on the latching system to prevent locking from the outside.

(7) Ladder requirements. Fixed ladders shall be corrosion resistant.

RECOMMENDATION: Ladders should conform to ANSI A14.1-1982 [2], ANSI A14.2-1982 [3], ANSI A14.3-1982 [4] or ANSI A14.5-1982 [5].

(8) Drainage. Where drainage is into sewers, suitable traps or other means should be provided to prevent entrance of sewer gas into manholes, vaults, or tunnels.

(9) Ventilation. Adequate ventilation to open air shall be provided for manholes, vaults, and tunnels, having an opening into enclosed areas used by the public. Where such enclosures house transformers, switches, regulators, etc., the ventilating system shall be cleaned at necessary intervals.

Note: This does not apply to enclosed areas under water or in other locations where it is impractical to comply.

(10) Mechanical protection. Supply cables and equipment should be installed or guarded in such a manner as to avoid damage by objects falling or being pushed through the grating.

(11) Identification. Manhole and handhole covers should have an identifying mark which will indicate ownership or type of utility.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-38653, filed 7/25/86.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency and appear herein pursuant to the requirements of RCW 34.08.040.

WAC 296-44-398 Supply cable.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-398, filed 7/25/86.]

WAC 296-44-39809 General.

RECOMMENDATION: Cable should be capable of withstanding tests applied in accordance with an applicable standard issued by a recognized organization such as the American National Standard Institute, Association of Edison Illuminating Companies, the Insulated Cable Engineers Association, the National Electrical Manufacturers Association, or the American Society for Testing and Materials.

(1) The design and construction of conductors, insulation, sheath, jacket, and shielding shall include consideration of mechanical, thermal, environmental, and electrical stresses which are expected during installation and operation.

(2) Cable shall be designed and manufactured to retain specified dimensions and structural integrity during manufacture, reeling, storage, handling, and installation.

(3) Cable shall be designed and constructed in such a manner that each component is protected from harmful effects of other components.

(4) The conductor, insulation, and shielding shall be designed to withstand the effects of the expected magnitude and duration of fault current, except in the immediate vicinity of the fault.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-39809, filed 7/25/86.]

WAC 296-44-39823 Sheaths and jackets. Sheaths, jackets, or both shall be provided when necessary to protect the insulation or shielding from moisture or other adverse environmental conditions.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-39823, filed 7/25/86.]

WAC 296-44-39842 Shielding. (1) General.

(a) Conductor shielding should, and insulation shielding shall, be provided as specified by an applicable document issued by a nationally recognized cable standardization organization.

Note: Typical cable standardization organizations include: The Association of Edison Illuminating Companies, the Insulated Cable Engineers Association and the National Electrical Manufacturers Association.

Note: Shielding is not required for short jumpers which do not contact a grounded surface within enclosures or vaults, provided the jumpers are guarded or isolated.

(b) Insulation shielding may be sectionalized provided that each section is effectively grounded.

(2) Material.

(a) The shielding system may consist of semiconducting materials, nonmagnetic metal, or both. The shielding adjacent to the insulation shall be designed to remain in intimate contact with the insulation under all operating conditions.

(b) Shielding material shall either be designed to resist excessive corrosion under the expected operating conditions or shall be protected.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-39842, filed 7/25/86.]

WAC 296-44-39855 Cable accessories and joints. (1) Cable accessories and joints shall be designed to withstand the mechanical, thermal, environmental, and electrical stresses expected during operation.

(2) Cable accessories and joints shall be designed and constructed in such a manner that each component of the cable and joint is protected from harmful effects of the other components.

(3) Cable accessories and joints shall be designed and constructed to maintain the structural integrity of the cables to which they are applied and to withstand the magnitude and duration of the fault current expected during operation, except in the immediate vicinity of the fault.

(4) For insulating joints, see WAC 296-44-39842 (1)(b).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-39855, filed 7/25/86.]

WAC 296-44-413 Cable in underground structures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-413, filed 7/25/86.]

WAC 296-44-41309 General. (1) WAC 296-44-398 shall apply to supply cable in underground structures.

(2) On systems operating above 2 kV to ground, the design of the conductors or cables installed in nonmetallic conduit should consider the need for an effectively grounded shield, a sheath, or both.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-41309, filed 7/25/86.]

WAC 296-44-41321 Installation. (1) General.

(a) Bending of the supply cable during handling, installation, and operation shall be controlled to avoid damage.

(b) Pulling tensions and sidewall pressures on the supply cable should be limited to avoid damage.

Note: Manufacturers' recommendations may be used as a guide.

(c) Ducts should be cleaned of foreign material which could damage the supply cable during pulling operations.

(d) Cable lubricants shall not be detrimental to cable or conduit systems.

(e) On slopes or vertical runs, consideration should be given to restraining cables to prevent downhill movement.

(f) Supply, control, and communication cables shall not be installed in the same duct unless the cables are maintained or operated by the same utility.

(2) Cable in manholes and vaults.

(a) Supports.

(i) Cable supports shall be designed to withstand both live and static loading and should be compatible with the environment.

(ii) Supports shall be provided to maintain specified separation between cables.

(iii) Horizontal runs of supply cables shall be supported at least three inches above the floor, or be suitably protected.

Note: This rule does not apply to grounding or bonding conductors.

(iv) The installation should allow cable movement without destructive concentration of stresses. The cable should remain on supports during operation.

Note: Special protection may be necessary at the duct entrance.

(b) Separation.

(i) Adequate working space shall be provided in accordance with WAC 296-44-38653(2).

(ii) Between supply and communication facilities (cable, equipment, or both).

(A) Where cable, equipment, or both are to be installed in a joint-use manhole or vault, it shall be done only with the concurrence of all parties concerned.

(B) Supply and communication cables should be racked from separate walls. Crossings should be avoided.

(C) Where supply and communication cables must be racked from the same wall, the supply cables should be racked below the communication cables.

(D) Supply and communication facilities shall be installed to permit access to either without moving the other.

(E) Clearances shall be maintained as specified in Table 413-1.

(c) Identification.

(i) General.

(A) Cables shall be permanently identified by tags or otherwise at each manhole or other access opening of the conduit system.

Table 413-1
Minimum Separation Between Supply and Communications Facilities in Joint-Use Manholes and Vaults

Phase-to-Phase Supply Voltage	Surface to Surface (in)
0 to 15,000	6
15,001 to 50,000	9
50,001 to 120,000	12
120,001 and above	24

Note 1: These separations do not apply to grounding conductors.

Note 2: These separations may be reduced by mutual agreement between the parties concerned when suitable barriers or guards are installed.

Note: This requirement does not apply where the position of a cable, in conjunction with diagrams or maps supplied to workers, gives sufficient identification.

(B) All identification shall be of a corrosion-resistant material suitable for the environment.

(C) All identification shall be of such quality and located so as to be readable with auxiliary lighting.

(ii) Joint-use manholes. Where cables in a manhole are maintained or operated by different utilities or are of supply and communication usage, they shall be permanently marked as to company, type of use, or both.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-41321, filed 7/25/86.]

WAC 296-44-41333 Grounding and bonding. (1) Insulation shielding of cable and joints shall be effectively grounded.

(2) Cable sheaths or shields which are connected to ground at a manhole shall be bonded or connected to a common ground.

(3) Bonding and grounding leads shall be of a corrosion resistant material suitable for the environment or suitably protected.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-41333, filed 7/25/86.]

WAC 296-44-41341 Fireproofing. Although fireproofing is not a requirement, it may be provided in accordance with each utility's normal service reliability practice to provide protection from external fire.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-41341, filed 7/25/86.]

WAC 296-44-41359 Communication cables containing special supply circuits. Special circuits operating at voltages in excess of 400 V to ground and used for supplying power solely to communications equipment may be included in communications cables under the following conditions:

(1) Such cables shall have a conductive sheath or shield which shall be effectively grounded and each such circuit shall be carried on conductors which are individually enclosed with an effectively grounded shield.

(2) All circuits in such cables shall be owned or operated by one party and shall be maintained only by qualified personnel.

(3) Supply circuits included in such cables shall be terminated at points accessible only to qualified employees.

(4) Communications circuits brought out of such cables, if they do not terminate in a repeater station or terminal office, shall be protected or arranged so that in event of a failure within the cable, the voltage on the communications circuit will not exceed 400 V to ground.

(5) Terminal apparatus for the power supply shall be so arranged that live parts are inaccessible when such supply circuits are energized.

(6) Such cables shall be identified, and the identification shall meet the pertinent requirements of WAC 296-44-41321 (2)(c).

Note: The requirements of WAC 296-44-41359(1) do not apply to supply circuits of 550 V or less which carry power not in excess of 3200 W.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-41359, filed 7/25/86.]

WAC 296-44-425 Direct buried cable.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-425, filed 7/25/86.]

WAC 296-44-42509 General. (1) WAC 296-44-398 through 296-44-39855 shall apply to direct buried supply cable.

(2) Cables operating above 600 V to ground shall have a continuous shield, sheath, or concentric neutral which is effectively grounded.

(3) Cables of the same circuit operating below 600 V to ground and without an effectively grounded shield or sheath shall be placed in close proximity (no intentional separation) to each other.

(4) Communications cables containing special circuits supplying power solely to communications equipment shall comply with the requirements of WAC 296-44-41359 (1)(a) through (e).

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-42509, filed 7/25/86.]

WAC 296-44-42521 Location and routing. (1) General.

(a) Cables should be located so as to be subject to the least disturbance practical. Cables to be installed parallel to other subsurface structures should not be located directly over or under other subsurface structure, but if this is not practical, the rules on clearances in WAC 296-44-42533 should be followed.

(b) Cables should be installed in as straight and direct a line as practical. Where bends are required, the minimum radius shall be sufficiently large to prevent damage to the cable being installed.

(c) Cable systems should be routed so as to allow safe access for construction, inspection, and maintenance.

(d) The location of structures in the path of the projected cable route shall, as far as practical, be determined prior to trenching, plowing, or boring operation.

(2) Natural hazards. Routes through unstable soil such as mud, shifting soils, corrosive soils, or other natural hazards, should be avoided. If burying is required through areas with natural hazards, the cables shall be constructed and installed in such a manner as to protect them from damage. Such protective measures should be compatible with other installations in the area.

(3) Other conditions.

(a) Swimming pools. Supply cable should not be installed within five feet of a swimming pool or its auxiliary equipment. If five feet is not attainable, supplemental mechanical protection shall be provided.

(b) Buildings and other structures. Cable should not be installed directly under building or storage tank foundations. Where a cable must be installed under such a structure, the structure shall be suitably supported to prevent transfer of a harmful load onto the cable.

(c) Railroad tracks.

(i) The installation of cable longitudinally under the ballast section for railroad tracks should be avoided. Where cable must be installed longitudinally under the ballast section of a railroad, it should be located at a depth of not less than fifty inches below the top of the rail.

Note: Where this is impractical, or for other reasons, this clearance may be reduced by agreement between the parties concerned.

Note: Where unusual conditions exist or where proposed construction would interfere with existing installations, a greater depth than specified above would be required.

(ii) Where a cable crosses under railroad tracks, the same clearances indicated in WAC 296-44-38609 (1)(e) shall apply.

(d) Highways and streets. The installation of cable longitudinally under traveled surfaces of highways and streets should be avoided. When cable must be installed longitudinally under the roadway, it should be installed in the shoulder or, if this is not practical, within the limits of one lane of traffic to the extent practical.

(e) Submarine crossings. Submarine crossings should be routed, installed, or both, so they will be protected from erosion by tidal action or currents. They should not be located where ships normally anchor.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-42521, filed 7/25/86.]

WAC 296-44-42533 Clearances from other underground structures (sewers, water lines, fuel lines, building foundations, steam lines, other supply or communication conductors not in random separation, etc.). (1) Horizontal clearance. The horizontal clearance between direct buried cable and other underground structures shall be controlled at a minimum of twelve inches or larger as necessary to permit access to and maintenance of either facility without damage to the other. Installations with less than twelve inch horizontal separation shall conform with requirements of subsection (3) of this section, WAC 296-44-42559, or both.

(2) Crossings.

(a) Where a cable crosses under another underground structure, the structure shall be suitably supported to prevent transfer of a harmful load onto the cable system.

(b) Where a cable crosses over another underground structure, the cable shall be suitably supported to prevent transfer of a harmful load onto the structure.

(c) Adequate support may be provided by installing the facilities with sufficient vertical separation.

(d) Adequate vertical clearance shall be maintained to permit access to and maintenance of either facility without damage to the other. A vertical clearance of twelve inches is, in general, considered adequate but the parties involved may agree to a lesser separation.

(3) Parallel facilities. If conditions require a cable system to be installed with less than twelve inches horizontal separation or directly over and parallel to another underground structure (or another underground structure installed directly over and parallel to a cable), it may be done providing all parties are in agreement as to the method. Adequate vertical clearance shall be maintained to permit access to and maintenance of either facility without damage to the other.

(4) Thermal protection. Cable should be installed with sufficient clearance from other underground structures, such as steam or cryogenic lines, to avoid thermal damage to the cable. Where it is not practical to provide adequate clearance, a suitable thermal barrier shall be placed between the two facilities.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-42533, filed 7/25/86.]

WAC 296-44-42541 Installation. (1) Trenching. The bottom of the trench receiving direct buried cable should be relatively smooth undisturbed earth, well tamped earth, or sand. When excavation is in rock or rocky soils, the cable should be laid on a protective layer of well tamped backfill. Backfill within four inches of the cable should be free of materials that may damage the cable. Backfill should be adequately compacted. Machine compaction should not be used within six inches of the cable.

(2) Plowing.

(a) Plowing in of cable in soil containing rock or other solid material should be done in such a manner that the solid material will not damage the cable, either during the plowing operation or afterward.

(b) The design of cable plowing equipment and the plowing-in operation should be such that the cable will not be damaged by bending, side-wall pressure, or excessive cable tension.

(3) Boring. Where a cable system is to be installed by boring and the soil and surface loading conditions are such that solid material in the region may damage the cable, the cable shall be adequately protected.

(4) Depth of burial.

(a) The distance between the top of a cable and the surface under which it is installed (depth of burial) shall be sufficient to protect the cable from injury or damage imposed by expected surface usage.

(b) Burial depths as indicated in this section are considered adequate, except as noted in (ii), (iii) and (iv) following.

(i) Supply cables or conductors

Voltage phase-to-phase	Depth of Burial (in)
0 to 600	24
601 to 50,000	30
50,001 and above	42

Note: Street light cables operating at not more than 150 V to ground may be buried at a depth not less than eighteen inches.

(ii) In areas where frost conditions could damage cables, greater burial depths than indicated above may be desirable.

(iii) Lesser depths than indicated above may be used where supplemental protection is provided.

(iv) Where the surface is not to final grade, under which a cable is to be installed, the cable should be placed so as to meet or exceed the requirements indicated above, both at the time of installation and subsequent thereto.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-42541, filed 7/25/86.]

WAC 296-44-42559 Random separation--Additional requirements. These rules apply to cables or conductors when the radial separation between them will be less than twelve inches.

(1) Supply cables or conductors. The cables or conductors of a supply circuit and those of another supply circuit may be buried together at the same depth with no deliberate separation between facilities, provided all parties involved are in agreement.

(2) Communication cables or conductors. The cables or conductors of a communication circuit and those of another communication circuit may be buried together and at the same depth with no deliberate separation between facilities, provided all parties involved are in agreement.

(3) Supply and communication cables or conductors. Supply cables or conductors and communication cables or conductors may be buried together at the same depth with no deliberate separation between facilities, provided all parties involved are in agreement and the following requirements are met:

(a) Voltage.

(i) Grounded supply systems shall not be operated in excess of 22,000 V to ground.

(ii) Ungrounded supply systems shall not be operated in excess of 5,300 V phase–to–phase.

(b) Bare or semiconducting jacketed grounded conductor.

(i) A supply facility operating above 300 V to ground shall include a bare or semiconducting jacketed grounded conductor in continuous contact with the earth. This conductor, adequate for the expected magnitude and duration of the fault current which may be imposed, shall be one of the following:

(A) A sheath, an insulation shield, or both;

(B) Multiple concentric conductors closely spaced circumferentially;

(C) A separate conductor in contact with the earth and in close proximity to the cable, where such cable or cables also have a grounded sheath or shield not necessarily in contact with the earth. The sheath, shield, or both, as well as the separate conductor, shall be adequate for the expected magnitude and duration of the fault currents which may be imposed.

Note: This is applicable when a cable in nonmetallic duct is considered as a direct buried cable installation and random separation is desired.

Note: Where buried cable passes through a short section of conduit such as under a roadway, the contact with earth of the grounded conductor can be omitted, provided the grounded conductor is continuous through the conduit.

(ii) The bare conductor or conductors in contact with the earth shall be of suitable corrosion resistant material. The conductor covered by a semiconducting jacket shall be compatible with the jacketing compound.

(iii) The radial resistivity of the semiconducting jacket shall not be more than one hundred meter ohms and shall remain essentially stable in service. The radial resistivity of the jacket material is that value calculated from measurements on a unit length of cable, of the resistance between the concentric neutral and a surrounding conducting medium. Radial resistivity is equal to the resistance of a unit length times the surface area of jacket divided by the average thickness of the jacket over the neutral conductors. All dimensions are to be expressed in meters.

(c) Ungrounded supply systems. Cables of an ungrounded supply system operating above 300 V shall be of effectively grounded concentric shield construction in continuous contact with the earth. Such cables shall be maintained in close proximity to each other.

(4) Multiple cable systems. More than one cable system buried in random separation may be treated as one system when considering clearance from other underground structures or facilities.

(5) Protection.

(a) Supply circuits operating above 300 V to ground or 600 V between conductors shall be so constructed, operated, and maintained that when faulted, they shall be promptly deenergized initially or following subsequent protective device operation (phase–to–ground faults for grounded circuits, phase–to–phase faults for ungrounded circuits).

(b) Ungrounded supply circuits operating above 300 V shall be equipped with a ground fault indication system.

(c) Communication protective devices shall be adequate for the voltage and currents expected to be impressed on them in the event of contact with the supply conductors.

(d) Adequate bonding shall be provided between the effectively grounded supply conductor or conductors and the communication cable shield or sheath at intervals which should not exceed one thousand feet.

(e) In the vicinity of supply stations where large ground currents may flow, the effect of these currents on communication circuits should be evaluated before communication cables are placed in random separation with supply cables.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–42559, filed 7/25/86.]

WAC 296–44–440 Risers.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–440, filed 7/25/86.]

WAC 296–44–44009 General. (1) Mechanical protection for supply conductors or cables shall be provided as required by WAC 296–44–170 through 296–44–31792. This protection should extend at least one foot below ground level.

(2) Supply conductors or cable should rise vertically from the cable trench with only such deviation as necessary to permit a reasonable cable bending radius.

(3) Exposed conductive pipes or guards containing supply conductors or cables shall be grounded in accordance with WAC 296–44–36551.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–44009, filed 7/25/86.]

WAC 296–44–44021 Installation. (1) The installation should be designed so that water does not stand in riser pipes above the frost line.

(2) Conductors or cables shall be supported in a manner designed to prevent damage to conductors, cables, or terminals.

(3) Where conductors or cables enter the riser pipe or elbow, they shall be installed in such a manner that shall minimize the possibility of damage due to relative movement of the cable and pipe.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–44021, filed 7/25/86.]

WAC 296–44–44033 Pole risers--Additional requirements. (1) Risers shall be located on the pole so as to provide climbing space (see WAC 296–44–21273).

(2) The number, size, and location of riser ducts or guards shall be limited to allow adequate access for climbing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–16–007 (Order 86–26), § 296–44–44033, filed 7/25/86.]

WAC 296–44–44047 Pad–mounted installations. (1) Supply conductors or cables rising from the trench to

transformers, switchgear, or other equipment mounted on pads shall be so placed and arranged that they will not bear on the edges of holes through the pad nor the edges of bends or other duct work below the pad.

(2) Cable entering pad-mounted equipment shall be maintained substantially at adequate depth for the voltage class until it becomes protected by being directly under the pad, unless other suitable mechanical protection is provided.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-44047, filed 7/25/86.]

WAC 296-44-452 Supply cable terminations.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-452, filed 7/25/86.]

WAC 296-44-45209 General. (1) Cable terminations shall be designed and constructed to meet the requirements of WAC 296-44-39855.

(2) Riser terminations not located within a vault, pad-mounted equipment, or similar enclosure shall be installed in a manner designed to assure that clearance specified in Parts 1 and 2 of this code are maintained.

(3) A cable termination shall be designed to prevent moisture penetration into the cable where such penetration is detrimental to the cable.

(4) Where clearances between parts at different potentials are reduced below those adequate for the voltage and BIL (basic impulse insulation level), suitable insulating barriers or fully insulated terminals shall be provided to meet the required equivalent clearances.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-45209, filed 7/25/86.]

WAC 296-44-45219 Support at terminations. (1) Cable terminations shall be installed in a manner designed to maintain their installed position.

(2) Where necessary, cable shall be supported or secured in a manner designed to prevent the transfer of damaging mechanical stresses to the termination, equipment, or structure.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-45219, filed 7/25/86.]

WAC 296-44-45231 Identification. Suitable circuit identification shall be provided for all terminations.

Note: This requirement does not apply where the position of the termination, in conjunction with diagrams or maps supplied to workmen, gives sufficient identification.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-45231, filed 7/25/86.]

WAC 296-44-45243 Separations and clearances in enclosures or vaults. (1) Adequate electrical clearances and separations of supply terminations shall be maintained, both between conductors and between conductors and ground, consistent with the type of terminator used.

(2) Where exposed live parts are in an enclosure, clearances and separations or insulating barriers adequate for the voltages and the design BIL shall be provided.

(3) Where a termination is in a vault, uninsulated live parts are permissible provided they are guarded or isolated.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-45243, filed 7/25/86.]

WAC 296-44-45257 Grounding. (1) All exposed conducting surfaces of the termination device, other than live parts and equipment to which it is attached, shall be effectively grounded, bonded, or both.

(2) Conductive structures supporting cable terminations shall be effectively grounded.

Note: Grounding, bonding, or both is not required where the above parts are isolated or guarded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-45257, filed 7/25/86.]

PART H--INSTALLATION AND MAINTENANCE OF ELECTRIC UTILIZATION EQUIPMENT

WAC 296-44-467 Equipment.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-467, filed 7/25/86.]

WAC 296-44-46709 General. (1) Equipment includes:

(a) Buses, transformers, switches, etc., installed for the operation of the electric-supply system.

(b) Repeaters, loading coils, etc., installed for the operation of the communication system.

(c) Auxiliary equipment such as sump pumps, convenience outlets, etc., installed incidental to the presence of the supply or communication systems.

(2) Where equipment is to be installed in a joint-use manhole, it shall be done with the concurrence of all parties concerned.

(3) Supporting structures, including racks, hangers, or pads and their foundations shall be designed to sustain all loads and stresses expected to be imposed by the supported equipment including those stresses caused by its operation.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46709, filed 7/25/86.]

WAC 296-44-46733 Design. (1) The expected thermal, chemical, mechanical, and environmental conditions at the location shall be considered in the design of all equipment and mountings.

(2) All equipment, including auxiliary devices, shall be designed to withstand the effects of normal, emergency, and fault conditions expected during operation.

(3) Switches shall be provided with clear indication of contact position, and the handles or activating devices clearly marked to indicate operating directions.

RECOMMENDATION: The handles or control mechanism of all switches throughout the system should operate in a like direction to open and in a uniformly different direction to close in order to minimize errors.

(4) Remotely controlled or automatic devices shall have provisions for local blocking to prevent operation if such operation may result in a hazard to the worker.

(5) Enclosures containing fuses and interrupter contacts shall be designed to withstand the effects of normal, emergency, and fault conditions expected during operation.

(6) When tools are to be used to connect or disconnect energized devices, space or barriers shall be designed to provide adequate clearance from ground or between phases.

(7) Where pad-mounted equipment is not within a fenced or otherwise protected area, access to exposed live parts in excess of 600 V shall require two separate conscious acts. One shall be the opening of a door or barrier which is locked or otherwise secured against unauthorized entry. The other shall be either the opening or the removal of a second secured door or barrier.

RECOMMENDATION: A prominent warning sign should be placed on the second door or barrier and be visible when the first is opened or removed.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46733, filed 7/25/86.]

WAC 296-44-46739 Location in underground structures. (1) Equipment shall not obstruct personnel access openings in manholes or vaults nor shall it prevent easy egress by men working in the structures containing the equipment.

(2) Equipment shall not be installed closer than eight inches to the back of fixed ladders and shall not interfere with the proper use of such ladders.

(3) Equipment should be arranged in a manhole or vault to permit installation, operation, and maintenance of all items in such structures.

(4) Switching devices which have provision for manual or electrical operation shall be operable from a safe position. This may be accomplished by use of portable auxiliary devices, temporarily attached.

(5) Equipment should not interfere with drainage of the structure.

(6) Equipment shall not interfere with the ability to ventilate any structure or enclosure.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46739, filed 7/25/86.]

WAC 296-44-46747 Installation. (1) Provisions for lifting, rolling to final position, and mounting shall be adequate for the weight of the device.

(2) Live parts shall be guarded or isolated to prevent contact by persons in a normal position adjacent to the equipment.

(3) Operating levers, inspection facilities, and test facilities shall be visible and readily accessible when equipment is in final location without moving permanent connections.

(4) Live parts shall be isolated or protected from exposure to conducting liquids or other material expected to be present in the structure containing the equipment.

(5) Operating controls of supply equipment, readily accessible to unauthorized personnel, shall be secured by bolts, locks, or seals.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46747, filed 7/25/86.]

WAC 296-44-46755 Grounding. (1) Cases and enclosures made of conductive material shall be effectively grounded or guarded.

(2) Guards constructed of conductive material shall be effectively grounded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46755, filed 7/25/86.]

WAC 296-44-46761 Identification. Where transformers, regulators, or other similar equipment operate in multiple, tags, diagrams, or other suitable means shall be used to indicate that fact.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-46761, filed 7/25/86.]

WAC 296-44-491 Installation in tunnels.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-491, filed 7/25/86.]

WAC 296-44-49109 General. (1) The installation of supply and communication facilities in tunnels shall meet the applicable requirements contained elsewhere in WAC 296-44-350 through 296-44-49121 as supplemented or modified by this section.

(2) Where the space occupied by supply or communications facilities in a tunnel is accessible to other than qualified persons, or where supply conductors do not meet the requirements of WAC 296-44-350 through 296-44-49121 for cable systems, the installation shall be in accordance with the applicable requirements of WAC 296-44-170 through 296-44-31792.

(3) All parties concerned must be in agreement with the design of the structure and designs proposed for installations within it.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-49109, filed 7/25/86.]

WAC 296-44-49121 Environment. (1) When the tunnel is accessible to the public or when workers must enter the structure to install, operate, or maintain the facilities in it, the design shall provide a controlled safe environment including where necessary, barriers, detectors, alarms, ventilation, pumps, and adequate safety devices for all facilities. Controlled safe environment shall include:

(a) Design to avoid poisonous or suffocation atmosphere.

(b) Design to protect persons from pressurized lines, fire, explosion, and high temperatures.

(c) Design to avoid unsafe conditions due to induced voltages.

(d) Design to prevent hazards due to flooding.

(e) Design to assure egress; two directions for egress shall be provided for all points in tunnels.

(f) Working space, in accordance with WAC 296-44-38653(2), the boundary of which shall be a minimum of two feet away from vehicular operating space or from exposed moving parts of machinery.

(g) Safeguards designed to protect workers from hazards due to the operation of vehicles or other machinery in tunnels.

(h) Unobstructed walkways for workers in tunnels.

(2) A condition of occupancy in multiple-use tunnels by supply and communications facilities shall be that the design and installation of all facilities is coordinated to provide a safe environment for the operation of supply facilities, communications facilities, or both. Safe environment for facilities shall include:

(a) Means to protect equipment from harmful effects of humidity or temperature.

(b) Means to protect equipment from harmful effects of liquids or gases.

(c) Coordinated design and operation of corrosion control systems.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-16-007 (Order 86-26), § 296-44-49121, filed 7/25/86.]

WAC 296-44-850 Pole lines that overbuild or underbuild existing pole lines. No company shall construct a pole line which will overbuild or underbuild the existing pole lines of any company without first giving such company fifteen days' notice in writing or receiving the permission of the company affected: *Provided*, That this rule shall not apply to wires crossing over or under existing wires at an angle in excess of fifteen degrees: *Provided further*, That this rule shall only apply when either the existing or the proposed line is to be operated at a potential in excess of 5,000 volts.

[Rule 34, filed 8/3/61.]

WAC 296-44-855 High potential lines overbuilding telephone, telegraph, or signal wires. Wires or cables carrying electricity at a potential of 750 volts or more, overbuilding telephone, telegraph, or signal wires shall have a minimum size of wire No. 6 B & S gauge annealed copper or its equivalent in strength: *Provided further*, That this rule shall only apply when either the existing or the proposed line is to be operated at a potential in excess of 5,000 volts.

[Rule 35, filed 8/3/61.]

WAC 296-44-860 Crossings over railroads, street railroads, telephone, telegraph, signal or other power lines--General requirements. All wires or cables carrying electric current shall be run, placed, erected and maintained on crossings over railroads, street railroads, telephone, telegraph, signal or other power lines, in accordance with the following specifications: (1) Location: The poles, or towers, shall be located as far as practicable from inflammable material or structures.

(2) The poles, or towers, supporting the crossing span, and the adjoining span on each side preferable shall be in a straight line.

(3) Power wires or cables shall cross above the telegraph, telephone, and similar wires wherever practicable.

(4) Cradles or overhead bridges shall not be used.

(5) Crossing spans shall have a maximum length of 150 feet, except by permission of the commission,* and the difference in length of the crossing and adjoining spans generally shall not be more than fifty percent of the length of the crossing span.

(6) Clearance: Poles shall not be located less than twelve feet from the nearest rail of mainline track, nor less than six feet from the nearest rail of sidings, except by permission of the commission.* At loading sidings sufficient space shall be left for a driveway.

(7) The separation of conductors supported by pin insulators shall not be less than:

Line voltage	Separation
Not exceeding 750 volts	10 inches
Exceeding 750 volts but not exceeding 7,500	12 inches
Exceeding 7,500 volts but not exceeding 15,000	22 inches
Exceeding 15,000 volts but not exceeding 27,000	30 inches
Exceeding 27,000 volts but not exceeding 35,000	36 inches
Exceeding 35,000 volts but not exceeding 47,000	45 inches
Exceeding 47,000 volts but not exceeding 70,000	60 inches

Note 1.—This requirement does not apply to wires of the same phase or polarity between which there is no difference of potential.

Note 2.—The separation of conductors in series arc or incandescent circuits where the potential is not in excess of 10,000 volts need not exceed 12 inches.

(8) When supported by insulators of the disc or suspension type, the wire in the crossing span and the next adjoining spans shall be so attached to the insulators that a break in the span next adjoining the crossing span will not reduce the clearance specified more than twenty-five percent.

*Public service commission abolished. Duties devolve upon director of labor and industries, RCW 43.22.050.

(9) Conductors: The normal mechanical tension in the conductors generally shall be the same in the crossing span and in the adjoining span on each side.

(10) The conductors shall not be spliced in the crossing span, nor in the adjoining span on either side when there are more than two spans between crossings.

(11) The method of supporting the conductors at the poles, or towers, shall be such as to hold the wires, under maximum loading, to the supporting structures, in case of broken insulators, or wires broken or burned at the insulator, without allowing an amount of slip which would materially reduce the clearance specified.

(12) Crossarms: Double crossarms shall be used on the poles or towers supporting crossing spans having a potential in excess of 15,000 volts where the strength of the conductor is less than that of No. 2 B. & S. gauge annealed copper.

(13) Guys: Wooden poles supporting crossing spans having a length of one hundred and twenty-five feet or

more, and the next adjoining poles shall be headguyed away from the crossing span in all cases where the potential is in excess of 15,000 volts.

(14) Strain insulators shall not be used in guying steel structures, and are not required on wooden poles if the guy is effectually grounded, except within the incorporated limits of any city or town as provided in RCW 19.29.010(11).

(15) Clearing: The space around the poles, or towers, shall be kept free from inflammable material, underbrush and grass.

(16) Temperature: In the computation of stresses and clearances, and in erection, provision shall be made for a variation in temperature from minus 20 degrees Fahrenheit to plus 120 degrees Fahrenheit. A suitable modification in the temperature requirements shall be made for regions in which the above limits would not fairly represent the extreme range of temperature.

[Rule 36, subsections 1–16, filed 8/3/61.]

WAC 296-44-865 Crossings over railroads, street railroads, telephone, telegraph, signal or other power lines--Loads. (1) The conductors shall be considered as uniformly loaded throughout their length, with a load equal to the resultant of the dead load plus the weight of a layer of ice one-half inch in thickness, and a wind pressure of 8.0 pounds per square foot on the ice-covered diameter, at a temperature of 0 degrees Fahrenheit.

(2) The weight of ice shall be assumed as 57 pounds per cubic foot (0.033 pounds per cubic inch).

(3) Insulators, pins, and conductor attachments shall be designed to withstand, with the designated factor of safety, the tension in the conductors under the maximum loading.

(4) The poles, or towers, shall be designed to withstand, with the designated factor of safety, the combined stress from their own weight, the wind pressure on the pole, or tower, and the above wire loading on the crossing span and the next adjoining span on each side. The wind pressure on the poles, or towers, shall be assumed at 13 pounds per square foot on the projected area of solid or close structures, and on one and one-half times the projected area of latticed structures.

(5) The poles, or towers, shall also be designed to withstand the loads specified in subsection (4) above combined with the unbalanced tension of:

2 broken wires for poles, or towers, carrying 5 wires or less.

3 broken wires for poles, or towers, carrying 6 to 10 wires.

4 broken wires for poles, or towers, carrying 11 or more wires.

(6) Crossarms shall be designed to withstand the loading specified in subsection (4) above combined with the unbalanced tension of one wire broken at the pin farthest from the pole.

(7) The poles, or towers, may be permitted a reasonable deflection under the specified loading, provided that such deflection does not reduce the clearances specified more than 25 percent, or produce stresses in excess of those specified in WAC 296-44-875.

[Rule 36, subsections 17–23, filed 8/3/61.]

WAC 296-44-870 Crossings over railroads, street railroads, telephone, telegraph, signal or other power lines--Factors of safety. (1) The ultimate unit stresses divided by the allowable unit stress shall be not less than the following:

Wires and cables	2
Pins	2
Insulators, conductor attachments and guys	3
Wooden poles and crossarms	3
Structural steel	3
Reinforced concrete poles and crossarms	4
Foundations	2

(2) Insulators: Each insulator shall be subjected to a dry flash over test for five consecutive minutes at the following test voltages:

Line voltage	Test voltage
Less than 30,000 3	times line voltage
Exceeding 30,000 but not exceeding 50,000 ..... 2 1/2	times line voltage
Exceeding 50,000 ..... 2 1/4	times line voltage

Each insulator shall further be so designed that, with excessive potential, at rated frequency, failure will first occur by flash over and not by puncture.

(3) Each separate part of a built-up insulator shall be subjected to its dry flash over test for five consecutive minutes. The minimum test voltage for each given part of a built-up insulator shall be the potential difference across such part when the assembled insulator is subjected to test as specified in subsection (2) above.

(4) Each insulator shall be subjected to a wet flash over test, under a precipitation of water of one-fifth of an inch per minute, at an inclination of forty-five degrees to the axis of the insulator at the following test voltages:

Line voltage	Test voltage
Less than 30,000 2	times line voltage
Exceeding 30,000 ..... 1 3/4	times line voltage

(5) Test voltage above 35,000 volts shall be determined by the A.I.E.E. Standard Spark-Gap Method.

(6) Test voltages below 35,000 volts shall be determined by transformer ratio.

(7) Conductors: The conductors shall be of copper, aluminum or other noncorrodible material or of steel covered with such noncorrodible material.

(8) Conductors shall be of such mechanical strength that when subjected to the most severe loading conditions specified in WAC 296-44-865(1), the tension will not exceed fifty percent of the ultimate strength of the conductor and that under the maximum deflection from such loading the clearances specified will not be reduced.

(9) Insulators for use on lines operated at a potential in excess of 5,000 volts shall be of porcelain or such other material and design that the insulator will have a mechanical strength equivalent to a porcelain insulator, conforming in dielectric strength to subsections 2–6 above.

(10) Strain insulators for guys shall have an ultimate strength of not less than twice that of the guy in which placed. Strain insulators for guys shall not flash over at the line voltage under a precipitation of one–fifth of an inch per minute, at an inclination of forty–five degrees to the axis of the insulator.

Note: This only applies in the case of guys placed in observance of WAC 296-44-860(13).

(11) Pins: For voltage of 15,000 and over, insulator pins shall be of steel, wrought iron, malleable iron, or other approved metal or alloy, and shall be galvanized or otherwise protected from corrosion: *Provided*, That cast iron pins having a minimum diameter of 1/2 inch need not be galvanized or otherwise specially protected from corrosion.

(12) Guys: Guys shall be galvanized or copper–covered stranded steel cable, not less than 1/4 inch in diameter, or galvanized rolled rods of equivalent tensile strength.

Note: This only applies in the case of guys placed in observance of WAC 296-44-860(13).

(13) Guys to the ground shall connect to a galvanized anchor rod, extending at least one foot above the ground level.

Note: This only applies in the case of guys placed in observance of WAC 296-44-860(13).

(14) Wooden poles: Wooden poles supporting conductors operated at a potential in excess of 7,500 volts shall be of selected timber, peeled, free from defects which would decrease their strength or durability, not less than seven inches minimum diameter at the top, and meeting the requirements as specified in WAC 296-44-865 (4) and (5) and subsection (1) of this section.

[Rule 36, subsections 24–37, filed 8/3/61.]

WAC 296-44-875 Crossings over railroads, street railroads, telephone, telegraph, signal or other power lines—Working unit stresses. Obtained by dividing the ultimate breaking strength by the factors of safety given in WAC 296-44-870(1).

(1) Structural steel:

	Lbs. Per Sq. In.
Tension (net section)	18,000
Shear	14,000
Compression $\frac{L}{R}$	18,000 $-60-\frac{L}{R}$

R equals radius of gyration.

(2) Rivets, pins:

Shear	10,000
Bearing	20,000
Bending	20,000

(3) Bolts:

Shear	8,500
Bearing	17,000
Bending	17,000

(4) Wires and cables:

Copper hard drawn, sold B. & S. G. 4–0, 3–0, 2–0	25,000
Copper hard drawn, solid B. & S. G. 1–0	27,500
Copper hard drawn, solid B. & S. G. No. 1	28,500
Copper hard drawn, solid B. & S. G. Nos. 2, 4, 6,	30,000
Copper soft drawn, solid B. & S. G.	17,000
Copper hard drawn, stranded B. & S. G.	30,000
Copper soft drawn, stranded B. & S. G.	17,000
Aluminum, hard drawn, stranded, B. & S. G. under 4–0	12,000
Aluminum, hard drawn, stranded, B. & S. G. 4–0 and over	11,500

(5) Untreated timber:

	Bending Lbs. Per Sq. In.	Compression $\frac{L}{60D}$
Eastern white cedar	600	600
Chestnut	850	850
Washington cedar	850	850
Idaho cedar	850	850
Port Oxford cedar	1,150	1,150
Long–leaf yellow pine	1,000	1,000
Short–leaf yellow pine	800	800
Douglas fir	900	900
White oak	950	950
Red cedar	700	700
Bald cypress (heartwood)	800	800
Redwood	650	650
Catalpa	500	500
Juniper	550	550

L equals length in inches.
D equals least side, or diameter, in inches.

Note 1: In lieu of the above construction, power lines may be carried on poles of such length and spaced at such distances that a wire breaking at any point in the crossing span will swing clear of wire leads below and not come within ten feet of the ground at the highest point.

Note 2: Drop wires from a pole to the patrons' premises or wires crossing over same need not conform to the foregoing specifications except as covered by the following note.

Note 3: Telephone and telegraph lines, and telephone and power drops or service wires must be placed below power wires carrying 750 volts or more, or otherwise must maintain the same standard of strength as the wires they cross or are above.

Note 4: Only the construction last in point of time so run, placed, erected or maintained shall be held to be in violation of the provisions of this rule.

[Rule 36, subsections 38–41, filed 8/3/61.]

WAC 296-44-880 Crossings over railroads, street railroads, telephone, telegraph, signal or other power lines—Clearance.

CLEARANCE The following clearances shall be maintained in all crossing spans	Rails of Railroads	Buildings	Telephone, Telegraph and Signal wires	Power Lines 750 Volts and less, Except Trolley wires
Telephone, telegraph and signal wires	25'	.....	2' above or below*	
Power lines 750 volts and less, except trolley wires	25'	4'	Less 300V 2' above More 300V 3' above	2' above or below
Power lines more than 750 volts and less than 7,500 volts	28'	6'	3' above	3' above or below

CLEARANCE The following clearances shall be maintained in all crossing spans	Rails of Rail-roads	Buildings	Telephone, Telegraph and Signal wires	Power Lines 750 Volts and less, Except Trolley wires
Power lines more than 7,500 volts and less than 15,000 volts	28'	6'	7' above	7' above
Power lines 15,000 volts or more	34'	8'	7' above	7' above
Trolley wires	22'	.....	4' below+	4' below
Drops and service wires	25'	.....	2' above or below	Less 300V 2' below More 300V 3' below

* Unless suitably supported to prevent contact.

\+ Except for properly protected cables when two feet will be permitted

CLEARANCE The following clearances shall be maintained in all crossing spans	Power Lines more than 750 an less than 7,500 volts	Power Lines more than 7,500 and less than 15,000 volts	Power Lines 15,000 volts or more	Trolley Wires
Telephone, telegraph and signal wires				
Power lines 750 volts and less, except trolley wires				
Power lines more than 750 volts and less than 7,500 volts	3' above or below			
Power lines more than 7,500 volts and less than 15,000 volts	7' above or below	7' above or below		
Power lines 15,000 volts or more	7' above or below	7' above or below	7' above or below	
Trolley wires	4' below	7' below	7' below	None
Drops and service wires above+	3' below	7' below	7' below	3'

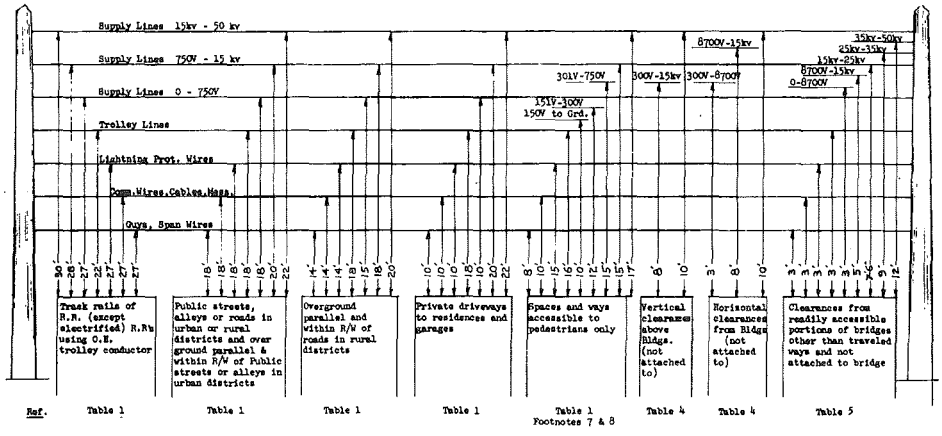
\+ Except for properly protected cables when two feet will be permitted.

[Rule (part), (codified as WAC 296-44-880), filed 8/3/61.]

WAC 296-44-88001 Figure 1--Ground wire clearance.

GROUND AND WIRE CLEARANCES

Fig. 1



Note: Above clearances are subject to local ordinances and laws.
State highways are governed by franchise.
For voltages above 50 kv – Basic clearance at 50 kv plus 0.5 ins. per kv in excess of 50 kv.

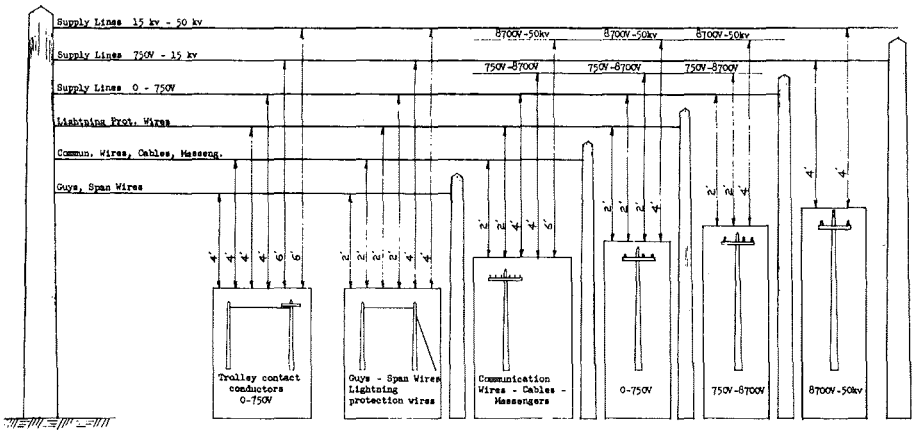
Ref: WAC 296-44-316(1) Table 1, WAC 296-44-322 (3) and (4) Tables 4 and 5.

[Figure 1, (codified as WAC 296-44-88001), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88002 Figure 2--Basic wire crossing clearance.

BASIC WIRE CROSSING CLEARANCES

Fig. 2

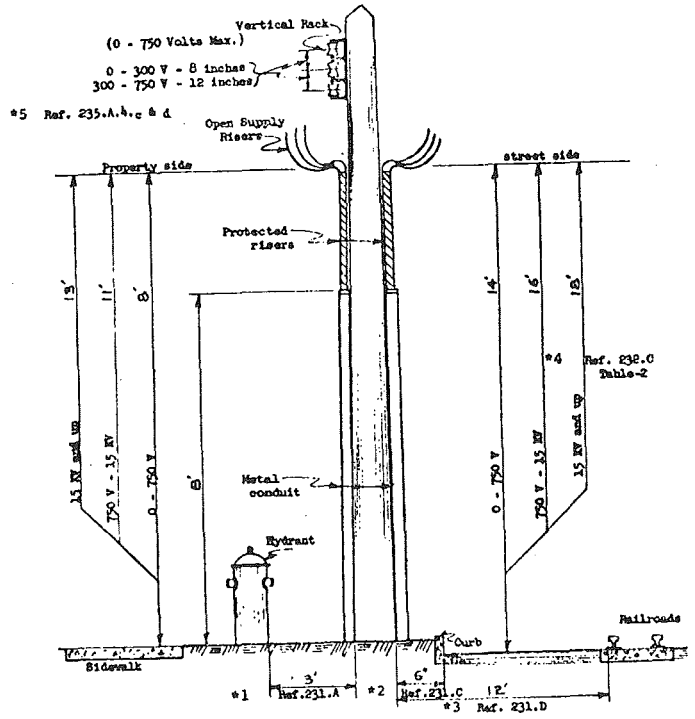


Ref: WAC 296-44-319(1) - Table 3

[Figure 2, (codified as WAC 296-44-88002), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88003 Figure 5--Clearances above ground for underground risers and horizontal clearance of poles from hydrants, curbs and railroads.

Fig. 5



Clearances above ground for underground risers and horizontal clearance of poles from hydrants, curbs and railroads.

*1 WAC 296-44-313(1).
*2 WAC 296-44-313(3).
*3 WAC 296-44-313(4).
*4 WAC 296-44-316(3).
*5 WAC 296-44-325 (1)(d)(iii) and (iv).

[Figure 5, (codified as WAC 296-44-88003), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88004 Illustration--Working space.

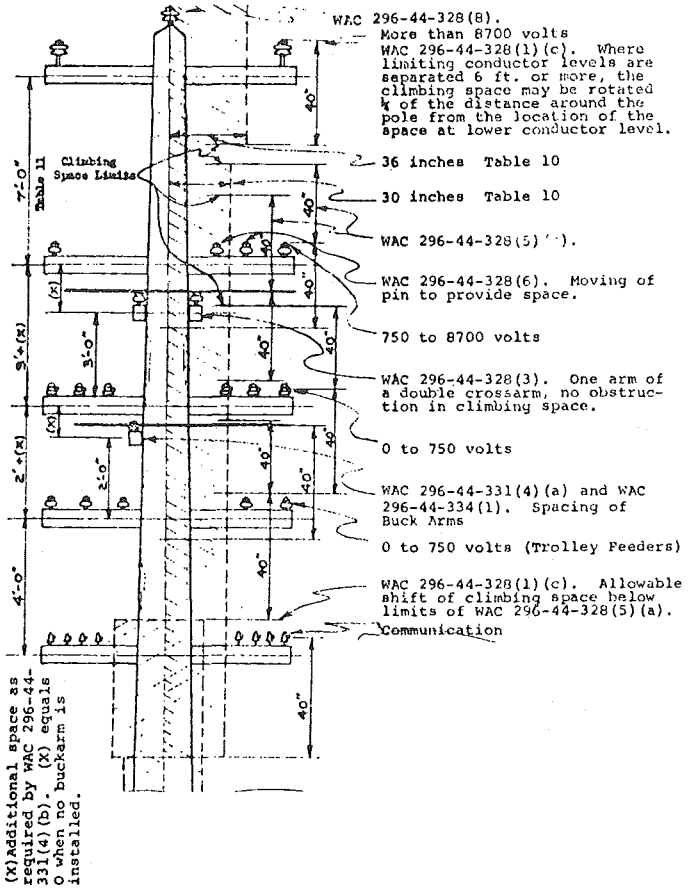


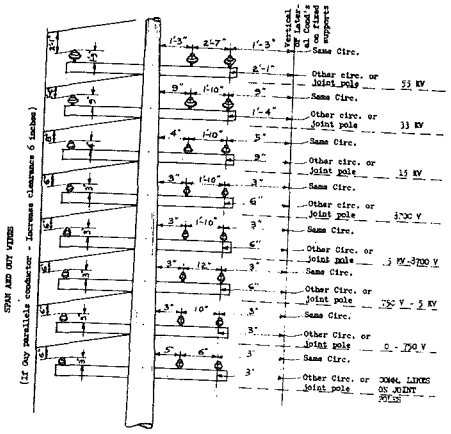
Illustration of
Minimum Crossarm Spacing
and
Minimum Climbing and Working Spaces

Note: The climbing space at communication conductors shall be the same as required for supply conductors immediately above, with a maximum of 30". (Footnote 2 – Table 10)
The climbing space of supply conductors shall be that required by Table 10 for the highest voltage conductor bounding the climbing space and where this voltage level is 40" or less above or below the next lower voltage level than the larger space shall be required. (The vertical separation of conductors on standard pin supports are the regular points for reference.)

[Illustration, (codified as WAC 296-44-88004), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88005 Figures 6.A - 9.A--Clearances.

Fig 6.A – 9.A



MINIMUM CLEARANCES BETWEEN CONDUCTORS AND FROM CONDUCTORS TO GUYS, SURFACES OF POLES, CROSSARMS, VERTICAL OR LATERAL CONDUCTORS ATTACHED TO FIXED SUPPORTS.

These clearances graphically represented are basic minimums and are not intended to represent absolute allowable clearances under these rules.

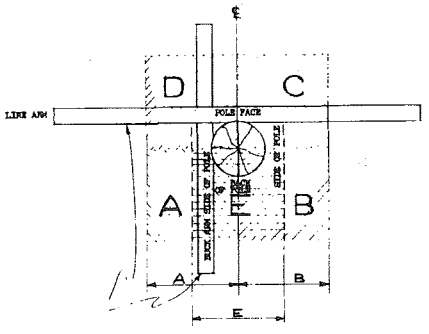
Note: If suspension insulators are not restrained from movement, these clearances are to be maintained with insulator swing of 45° on steel supports or 30° on wooden supports.

INTERPOLATION: For vertical and lateral conductors of over 8700 volts OF THE SAME CIRCUIT – 3 ins. plus 0.25 in. for each 1000 volts. OF OTHER CIRCUITS – 6 ins. plus 0.4 in. for each 1000 volts.

REF. WAC 296-44-325 – Tables 6 and 9
WAC 296-44-334 (5)(c)

[Figures 6.A – 9.A, (codified as WAC 296-44-88005), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88006 Figure--Climbing space.



WAC 296-44-328(3) A single cross arm at any conductor level is considered as an obstruction in the climbing space. WAC 296-44-328(4).

WAC 296-44-328 (1)(c) "A"-"B"-"C"-& "D" Pole quadrants of the dimensions specified in Table #10 for the voltage of the conductor

concerned.

If climbing space is located in quadrant "B," then it may be rotated to quadrant "A" or "C" in any 6 ft. conductor separation.

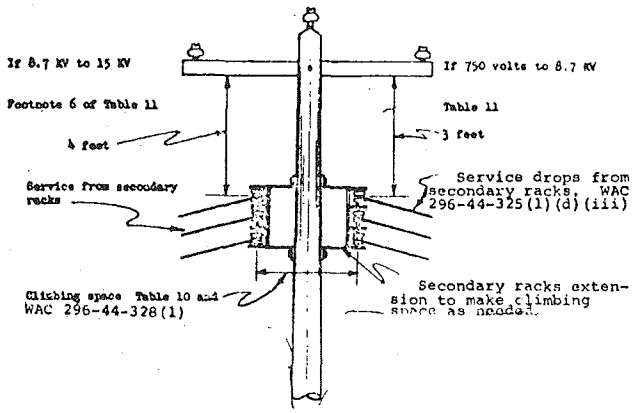
"E" Climbing space on back of pole and may be shifted to quadrants "A" or "B" at 40 inches below limiting conductor levels, or to "C" or "D" in any 6 ft. conductor spacing by the shortest path.

WAC 296-44-331(4) Location of buckarms in relation to linearms.

Note: Conductors supported in standard 29 1/2 in. pin spaces which conflict with the climbing space requirements shall be considered in compliance with the 30 in. climbing space as specified in WAC 296-44-328.

[Figure, (codified as WAC 296-44-88006), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88007 Illustration--Climbing space.



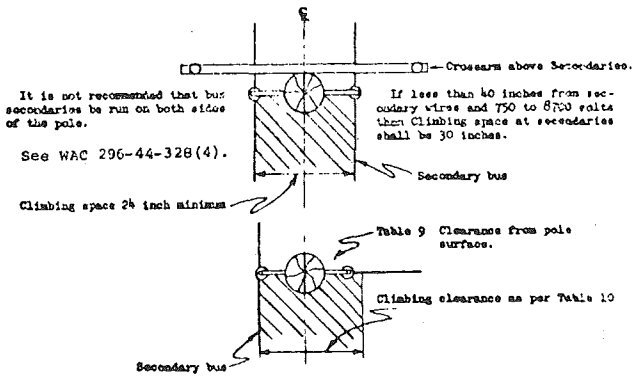
Note: The following application of these rules will be made when secondary racks installed according to WAC 296-44-325 (1)(d) are involved.

(1) Secondary racks will be considered the same as crossarms for the application of Table 11 and dimensions as per WAC 296-44-334(1) will apply.

(2) The top and bottom conductors will be the limiting conductors as per WAC 296-44-328 (5)(a).

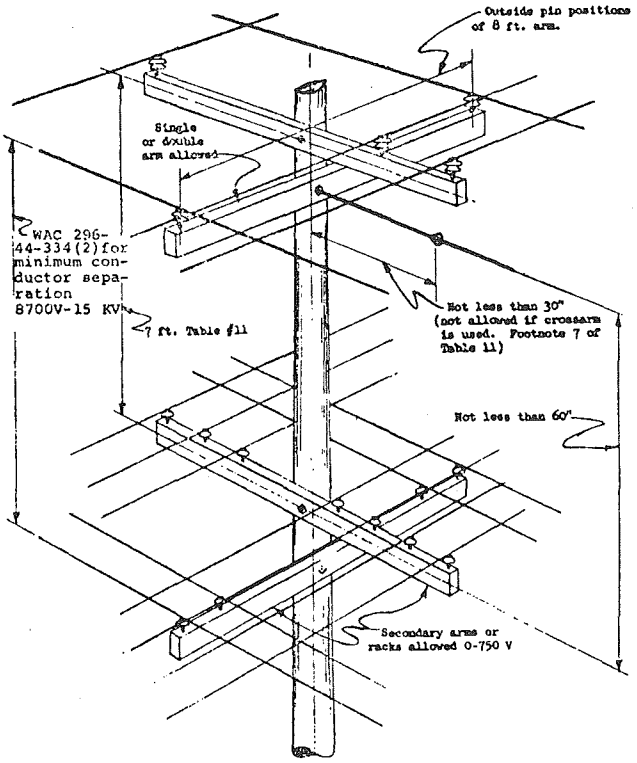
[Illustration, (codified as WAC 296-44-88007), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88008 Illustration--Climbing space.



[Illustration, (codified as WAC 296-44-88008), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88009 Illustration--Footnote 7 of Table 11--Climbing space.



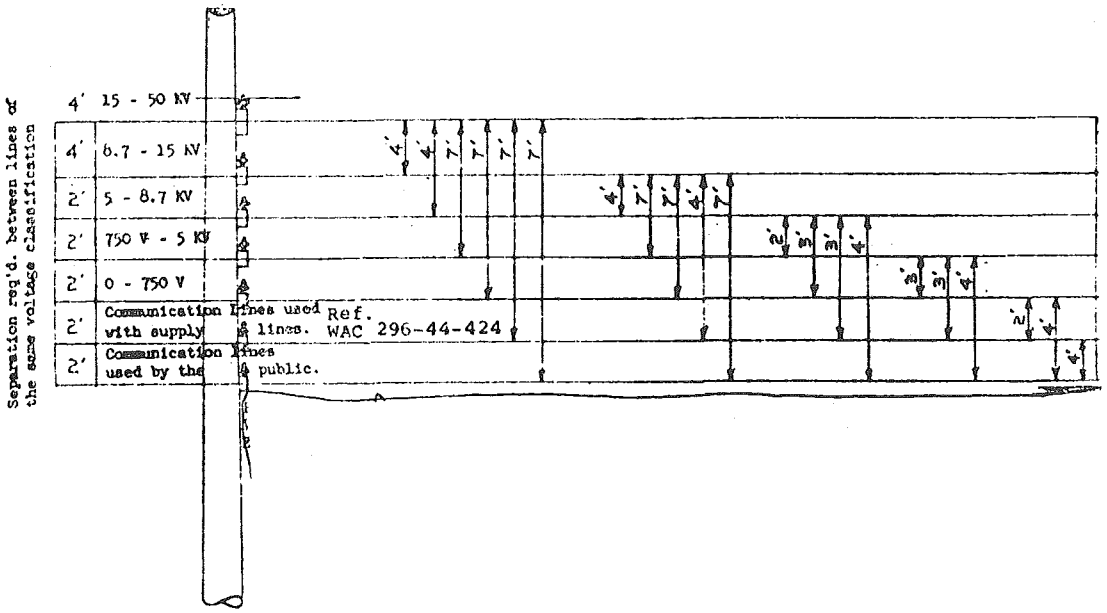
Ref. - WAC 296-44-334 (1)(a).
FOOTNOTE 7 OF TABLE #11.

[Illustration, (codified as WAC 296-44-88009), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88010 Figure 11.A--Minimum vertical separation between horizontal crossarms.

Fig. 11.A

Minimum vertical separation between horizontal crossarms of the same utility and communication circuits.



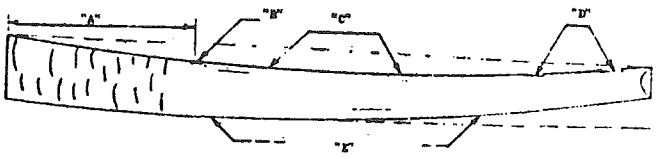
REF. WAC 296-44-334 – Table 11
EXCEPTION: See WAC 296-44-334 (1)(a), Table 11–Footnote 6.

WHERE CONDUCTORS ARE OF THE SAME VOLTAGE CLASSIFICATION

Where crossarm separation is:	Separation between conductors may be reduced to:
2 Ft.	16 ins.
3 Ft.	28 ins.
4 Ft.	40 ins.
6 Ft.	60 ins.
7 Ft.	70 ins.

[Figure 11.A, (codified as WAC 296-44-88010), filed 3/23/60, effective 12/1/58.]

WAC 296-44-88011 Illustration--Climbing space--Location and spacing of crossarms.



WAC 296-44-400 (1)(f) Length or distance from butt of pole to butt gain or other marking that will indicate depth of pole setting.

WAC 296-44-400 (1)(f) Butt gain or other permanent marking.

WAC 296-44-328(3) Face of pole, preferred for the location of line arms.

"D" Cut gains for the location and spacing of crossarms.

"E" Back of pole. Preferred location of climbing space.

[Illustration, (codified as WAC 296-44-88011), filed 3/23/60, effective 12/1/58.]

Chapter 296-45 WAC
SAFETY STANDARDS--ELECTRICAL WORKERS

WAC

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296-45-65005 Definitions.
296-45-65009 Employer's responsibility.
296-45-65011 Foreman's responsibility.
296-45-65013 Foreman–employee responsibility.
296-45-65015 Work required of foremen.
296-45-65017 Employee's responsibility.
296-45-65019 First aid.

296-45-65021 Tools and protective equipment.
296-45-65023 Clearances, operating power lines and equipment.
296-45-65025 Grounding.
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296-45-65047 Specification for linemen's belts and similar equipment.
296-45-660 Tree trimming.
296-45-66001 Electrical hazards.
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296-45-66005 Insulated tools used for tree trimming.
296-45-66007 Aerial manlift equipment.
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296-45-67539 Personnel.
296-45-67541 Fires.
296-45-67543 General.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-45-010 General. [§ 296-45-010, filed 1/3/68; § I, Rules 1.1 through 1.9, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-020 Causes of accident. [§ I, Rule 1.10, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-030 Safety. [§ I, Rule 1.11, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38,, filed 12/30/76.

296-45-040 Definitions. [§ I, Rules 1.12 through 1.29, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-050 Employer's responsibility. [§ II, Rules 2.1 through 2.11, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-060 Foreman's responsibility. [§ II, Rules 2.12 through 2.23, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-070 Employees' responsibility. [§ II, Rules 2.24 through 2.31, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-080 First aid. [§ III, Rules 3.1 through 3.4, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-090 Industrial hygiene. [§ III, Rules 3.5 through 3.7, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-110 Tools—General. [§ IV, Rules 4.1 through 4.7, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-120 Tools—Inspection of tools. [§ IV, Rules 4.8 and 4.9, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-130 Tools—Storage of tools and materials. [§ IV, Rule 4.10, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-140 Tools—Hand tools—Using metal objects. [§ IV, Rules 4.11 and 4.12, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-150 Tools—Ladders. [§ IV, Rules 4.13 through 4.27, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-160 Tools—Scaffolds. [§ IV, Rule 4.28, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-170 Tools—Guards and barriers. [§ IV, Rule 4.29, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-180 Tools—Grounding equipment. [§ IV, Rules 4.30 and 4.31, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-190 Tools—Hot line tools. [§ IV, Rules 4.32 and 4.33, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-200 Tools—Switch stick. [§ IV, Rules 4.34 and 4.35, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-210 Tools—Climbing equipment. [§ IV, Rules 4.36 through 4.39, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-220 Protective devices—Rubber protective equipment. [§ IV, Rules 4.40 through 4.51, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-230 Equipment—Soldering equipment. [§ IV, Rules 4.52 through 4.55, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-240 Equipment—Fire extinguishers. [§ IV, Rule 4.56, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-250 Wearing apparel. [§ 296-45-250, filed 1/3/68; § IV, Rules 4.57 through 4.61, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-260 Transportation—Motor vehicle and trailer operations law. [§ IV, Rule 4.62, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-270 Transportation—Safety practices. [§ 296-45-270, filed 1/3/68; § IV, Rules 4.63 through 4.69, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-280 Employee qualifications. [§ V, Rule 5.1, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-290 Work required of foreman. [§ V, Rule 5.2, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-300 Number of men required to do work safely. [§ V, Rules 5.3 through 5.5, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-310 Replacing or pulling fuses. [§ V, Rules 5.6 through 5.8, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-320 Electric utility employee operated motor cranes, "A" frames, aerial lift equipment, hole digger, winches, etc. [§ V, Rule 5.9, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-330 Working on or near energized lines or equipment. [§ V, Rules 5.10 through 5.15, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-340 Stringing or removing wires. [§ V, Rule 5.16, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-350 Temporary guard poles and structures. [§ V, Rule 5.17, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-360 Safe working practices. [§ V, Rules 5.18 through 5.46, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-370 Overhead lines—Working above energized circuits over 5 KV. [§ V, Rules 5.47 through 5.50, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-380 Overhead lines—Using hot line tools. [§ V, Rules 5.51 through 5.54, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-390 Overhead lines—Strength of spans and their supports. [§ V, Rules 5.55 and 5.56, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-400 Overhead lines—Foreign operations. [§ V, Rule 5.57, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-410 Overhead lines—Tree trimming. [§ V, Rule 5.58, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-420 Overhead lines—Foreign attachments and placards. [§ V, Rule 5.59, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-430 Substations and generating plants—General. [§ V, Rules 5.60 through 5.64, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-440 Maintenance of clearance. [§ V, Rule 5.65, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-450 Number of men required to work safely. [§ V, Rule 5.66, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-460 Safe working practices. [§ V, Rules 5.67 through 5.78, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-470 Clearances. [§ VI, Rules 6.1 through 6.13, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-480 Grounding. [§ VI, Rules 6.14 through 6.25, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-490 Underground maintenance—General. [§ VII, Rule 7.1, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-500 Underground maintenance—Working in manholes. [§ VII, Rules 7.2 through 7.7, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-510 Underground maintenance—Guarding manholes and street openings. [§ VII, Rules 7.8 through 7.12, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-520 Underground maintenance—Use of tools and equipment. [§ VII, Rules 7.13 through 7.17, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-530 Underground maintenance—Pulling U.G. cable. [§ VII, Rule 7.18, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-540 Underground maintenance—Testing. [§ VII, Rules 7.19 through 7.21, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-550 Underground maintenance—Fishing conduit or ducts. [§ VII, Rule 7.22, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-560 Underground maintenance—Working in elevated position. [§ VII, Rule 7.23, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-570 Underground maintenance—Grounding U.G. power conductors and equipment. [§ VII, Rules 7.24 through 7.27, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-580 Trolley maintenance. [§ VII, Rules 7.28 through 7.40, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-590 Aerial manlift equipment. [§ 296-45-590, filed 1/3/68; § VIII, Rules 8.1 through 8.10, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

296-45-600 Conclusion. [Matter following Rule 8.10, filed 3/23/60, effective 2/3/56.] Repealed by Order 76-38, filed 12/30/76.

WAC 296-45-650 Electrical workers safety rules--Foreword. The purpose of this chapter is to make the workplace of electrical employees as free from recognized hazard as is reasonably possible. The observance of these rules may in some instances require that speed and work performance be subordinated to the safety of employees. Since the purpose of these rules is the safety of employees, it is expected that those employees engaged in the work for which these rules are intended will, in good faith, adhere to the provisions of this chapter. This chapter is not intended to be a complete description of the work to be done nor is it complete in the sense that additional or unusual hazards may not exist for which there is no regulation or rule. In the event a hazard exists which is not contemplated by this chapter, it is expected that the foreman and employees will in good faith mutually discuss the particular hazard and arrive at a method of performing the work with the greatest degree of safety.

The department of labor and industries is the sole and paramount administrative agency responsible for the administration and interpretation of this chapter and the Washington Industrial Safety and Health Act of 1973. If there exists a question as to the meaning of any provision of this chapter, such question must first be directed to the department of labor and industries and its authorized representatives.

Experience has proven that the majority of injuries and deaths are preventable. Most injuries and deaths are not due to defective equipment but are due to failure on the part of the employees and those in authority to observe safety rules and failure to use safety devices. In the last analysis, this chapter is a compilation of experience and common sense. Electrical safety requires that the work be properly planned, executed by the use of good judgment and under the direction of intelligent supervision.

[Order 76-38, § 296-45-650, filed 12/30/76.]

WAC 296-45-65003 Scope and application. (1) The work for which this chapter is enacted is a specialized type of construction work and, insofar as it is specialized, such operations, procedures and work require a particular type of rule or regulation which is generally embodied within this chapter. The purpose of this chapter shall be to avoid those hazards peculiar to the industry, the purpose for which this chapter is designed, and this chapter shall include employees and employers whose business and work include power distribution and transmission lines. The standards apply to all such construction work of an electrical nature regardless of the general nature of the business. The criterion for application of this chapter shall be the nature of the particular work to be or which is being performed. That work

which is intended to be encompassed within the provisions of the mandatory and recommended provisions of this chapter shall include that work, conditions, practices, means, operations and processes performed at or on power distribution and transmission line installations, regardless of location, whether such installation for power distribution is (are) above ground or below ground, and shall include such adjacent and supporting structures as are fairly encompassed by these regulations.

Generally, the nature of the work will be such that industrial insurance premiums could reasonably be said to be reportable; (as of the effective date of this chapter) under WAC 296-17-521 (Class 5-8); WAC 296-17-522 (Class 6-1); and WAC 296-17-539 (Class 13-1). This guideline applies insofar as said class either directly or indirectly is related to the construction, erection, maintenance, repair, alteration, or other operation involving power distribution and transmission lines.

(2) Communication lines and work directed communication lines as defined in chapter 296-32 WAC (safety rules for tele-communications) are subject to the provisions of chapter 296-32 WAC and are not encompassed within the scope of this chapter.

(3) These standards shall apply to installations under the exclusive control of electric utilities used for the purpose of communications or metering, or for generation, control, transformation, transmission, and distribution of electric energy, which are located in buildings used exclusively by the electric utilities for such purposes, or located outdoors on property owned or leased by the electric utilities or on public highways, streets, roads, etc., or outdoors by established rights on private property.

(4) Operation, conditions, work methods and other work related situations or activities not specifically covered by this chapter are subject to the rules and regulations of chapter 296-24 WAC, general safety and health standards; chapter 296-62 WAC, general occupational health standards; chapter 296-155 WAC, safety standards for construction work; and, insofar as applicable to employee safety and health, chapter 19.29 RCW. Additionally, operations, conditions, work methods and other work related situations or activities may be subject to additional rules and regulations depending upon the nature of the work being performed.

(5) Under certain circumstances, an employer may obtain a variance from the director of the department of labor and industries or his authorized representative. Until such time as a variance is granted, the employer and employees must comply with the mandatory provisions of this chapter. The procedure and requirements for variances are found in WAC 296-350-200 through 296-350-280.

(6) These rules shall not apply to the use of existing electrical installations during their lifetime, provided they are maintained in good condition and in accordance with the applicable safety factor requirements and the rules in effect at the time they were installed, and provided that reconstruction shall conform to the rules as herein provided.

(7) Any rule, regulation or standard contained within this chapter, if subject to interpretation, shall be interpreted so as to achieve employee safety, which is the ultimate purpose of this chapter.

(8) Should a rule or standard contained within this chapter conflict, in any manner, with a standard or rule contained within a general (horizontal) chapter, the standard or rule contained herein shall apply so long as the work being done is electrical work involving power distribution and transmission lines. Should a standard or rule contained within this chapter conflict, in any manner, with a standard or rule contained within a specialized (vertical) chapter (one which applies to a particular type of work), the standard or rule contained herein shall apply as long as the work being performed involves power distribution and transmission lines as hereinbefore defined. Should there be a conflict between two or more standards or rules contained within this chapter, the standard or rule which affords the worker greater safety shall apply.

(9) Neither the promulgation of these rules, nor anything contained in these rules shall be construed as affecting the relative status or civil rights or liabilities between employers and their employees and/or the employees of others and/or the public generally; nor shall the use herein of the words "duty" and "responsibility" or either, import or imply liability other than provided for in the industrial insurance and safety laws of the state of Washington, to any person for injuries due to negligence predicated upon failure to perform or discharge any such "duty" or "responsibility," but failure on the part of the employees, foreman, or employer to comply with any compulsory rule may be cause for the department of labor and industries to take action in accordance with the industrial insurance and safety laws.

(10) "Shall" and "must" as used in this chapter make the provisions mandatory. "Should," "may," or "it is recommended" are used to indicate the provisions are not mandatory but are recommended.

(11) If any section, subsection, phrase, or provisions of this chapter or part thereof should be held invalid by any court for any reason, such invalidity shall not in any way affect the validity of the remainder of this chapter, unless such decision renders the remainder of the provision unintelligible, or changes the meaning of such other provision or provisions.

(12) When the language used in this chapter indicates that it is the responsibility, duty, or obligation of the foreman or other employee, it shall also be the employer's responsibility, obligation, and duty.

Whenever this chapter refers to the provisions of another safety and health standard or statute affecting safety and health, such reference refers to the statute or code in effect at the time the work is being performed.

[Order 76-38, § 296-45-65003, filed 12/30/76.]

WAC 296-45-65005 Definitions. These definitions are applicable to chapter 296-45 WAC.

(1) "Aerial manlift equipment." All types of equipment such as extended towers, boom-mounted cages or baskets, and truck-mounted ladders. This equipment is

primarily designed to place personnel and equipment aloft to work on elevated structures and equipment.

(2) "Apprentice." An employee who is being trained to be a journeyman.

(3) "Approved." Meets or exceeds the recognized standards of safety within the industry.

(4) "Approved protectors." Gloves worn over rubber insulating gloves which are of such material or substance and so constructed as to protect the rubber gloves from abrasions, lacerations, or other physical damage which might otherwise occur to rubber gloves. Approved protectors must conform to the standards which are recognized by the industry.

(5) "Automatic circuit recloser." A self–controlled device for automatically interrupting and reclosing an alternating current circuit with a predetermined sequence of opening and reclosing followed by resetting, hold closed, or lockout operation.

(6) "Barrier." A physical obstruction which is intended to prevent contact with energized lines or equipment.

(7) "Barricade." A physical obstruction such as tapes, screens, or cones intended to warn and limit access to a hazardous area.

(8) "Belts."

(a) "Lineman's body belt." A waist belt of approved material with a front buckle, two "D" rings for attaching safety straps and multiple loop strap for holding tools.

(b) "Strap." An adjustable leather, web, nylon, or other approved material in various lengths which permit free use of both hands in circling of post, pole, girder, etc. The safety strap permits the employee to assume a safe working position.

(c) "Construction belt." A strong leather, web, or other approved material belt at least 1 3/4 inches wide that may be equipped with fixed or adjustable "D" rings for attaching safety straps or lanyards.

(d) "Lanyard." A flexible line or strap of high tensile strength with snap hooks at one or both ends. They serve as safety straps or tail lines for use with belts or harness.

(9) "Bond." An electrical connection from one conductive element to another for the purpose of minimizing potential differences or providing adequate conductivity for fault current or for mitigation of leakage current and electrolytic action.

(10) "Bushing." An insulating structure including a through conductor, or providing a passageway for such a conductor, with provision for mounting on a barrier, conducting or otherwise, for the purpose of insulating the conductor from the barrier and conducting current from one side of the barrier to the other.

(11) "Cable." A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single–conductor cable) or a combination of conductors insulated from one another (multiple–conductor cable).

(12) "Cable sheath." A protective covering applied to cables. A cable sheath may consist of multiple layers of which one or more is conductive.

(13) "Circuit." A conductor or system of conductors through which an electric current is intended to flow.

(14) "Clearance (operating power lines and equipment)." The certification by the proper authority that a specified line or piece of equipment is deenergized, that the proper precautionary measures have been taken and the line or equipment is being turned over to the employee.

(15) "Climbing space." The vertical space reserved along the side of poles or structures to permit ready access to equipment and conductors located on poles or structures.

(16) "Communication lines." The conductors and their supporting or containing structures which are used for public or private signal or communication service: *Provided*, That such lines operate at potentials not exceeding 400 volts to ground or 750 volts between any two points of the circuit: *Provided further*, That the transmitted power does not exceed 150 watts. When operating at less than 150 volts, no limit is placed on the capacity of the system.

Communication lines generally include telephone, telegraph, cable antenna TV, railroad signal, data, clock, fire, police alarm, community television antenna, or other similar systems conforming with the above. Lines used for signaling purposes, but not included under the above definition, are considered as supply lines of the same voltage and are to be so run.

(17) "Conductor." Any material, usually in the form of a wire, cable, or bus bar which is approved for carrying an electric current.

(18) "Conductor shielding." An envelope which encloses the conductor of a cable and provides an equipotential surface in contact with the cable insulation.

(19) "Current–carrying part." A conducting part intended to be connected in an electric circuit to a source of voltage. Noncurrent–carrying parts are those not intended to be so connected.

(20) "De–energized (or dead)." Free from any electrical connection to a source of potential difference and from electrical charges. "Dead" is used only with reference to current–carrying parts which are sometimes alive or energized.

(21) "Designated or authorized employee." A qualified person delegated to perform specific duties under the conditions existing.

(22) "Effectively grounded." Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current–carrying capacity to prevent the buildup of voltages which may result in undue hazard to connected equipment or to persons.

(23) "Electric line truck." Any vehicle used to transport men, tools, and material, which serves as a traveling workshop for electric power line construction and maintenance work. It may be equipped with a boom and auxiliary equipment for setting poles, digging holes, and elevating material and/or workers.

(24) "Electric supply lines." Those conductors used to transmit electric energy together with necessary supporting and containing structures. Signal lines of more than 400 volts to ground are always electric supply lines if they are installed and used as electric supply lines.

(25) "Emergency." An unforeseen occurrence endangering life, limb, or property.

(26) "Enclosed." Surrounded by a case, cage, fence or otherwise which will protect the contained equipment and prevent accidental contact of a person with live parts.

(27) "Energized, alive, or live." Electrically connected to a source of potential difference or electrically charged so as to have a potential different from that of the earth or different from that of adjacent conductors or equipment. Electrical connections of less than 100 volts are not considered energized. Communication or signal lines as defined in this chapter are not considered energized.

(28) "Equipment." A general term which includes fittings, devices, appliances, fixtures, apparatus, and comparable equipment used as part of, or in connection with, an electrical power transmission and distribution system, or utility communication systems over 400 volts.

(29) "Exposed." Not isolated or guarded.

(30) "Fault current." As used in this chapter means the current that flows in an electrical system because of a defect in the circuit induced accidentally or otherwise.

(31) "Fixed ladder." A ladder which is permanently secured to a structure.

(32) "Foreman or man-in-charge." The person directly in charge of workers doing the work, regardless of title.

(33) "Foreign operation." Any business or work being performed which does not come within the mandatory scope and application of this chapter; an operation which would otherwise be subject to the provisions of this chapter may be subject to the provisions of another chapter in the event the employees performing the particular work were not competent as defined within the provisions of this chapter.

(34) "Guarded." Protected by personnel, covered, fenced, or enclosed by means of approved casings, barrier rails, screens, mats, platforms, or other approved devices in accordance with standard barricading techniques designed to prevent dangerous approach or contact by persons or conductive objects.

(35) "Ground" (reference)." That conductive body, usually earth or a system ground, to which an electric potential is referenced.

(36) "Ground" (as a noun). A conductive connection, whether intentional or accidental, by which an electric circuit or equipment is connected to reference ground.

(37) "Ground" (as a verb). The connecting or establishment of a connection, whether by intention or accident, of an electric circuit or equipment to reference ground.

(38) "Grounding." For the purpose of these rules, means the act of placing shorts and grounds on de-energized conductors and equipment.

(39) "Grounding electrode (ground electrode)." A conductor embedded in the earth, used for maintaining ground potential on conductors connected to it, and for dissipating into the earth current conducted to it.

(40) "Grounding electrode resistance." The resistance of the grounding electrode to earth.

(41) "Grounding electrode conductor (grounding conductor)." A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode.

(42) "Grounded conductor." A system or circuit conductor which is intentionally grounded.

(43) "Grounded system." A system of conductors in which at least one conductor or point (usually the middle wire, or neutral point of transformer or generator windings) is intentionally grounded either solidly or through a current-limiting device (not a current-interrupting device).

(44) "Groundman." A member of crew working on ground under direction of foreman.

(45) "Hotline tools and ropes." Those tools and ropes which are specifically designed for work on energized high voltage lines and equipment.

(46) "Insulated." Separated from other conducting surfaces by a dielectric substance including air space offering a high resistance to the passage of current. When any object is said to be insulated, it is understood to be insulated in an approved manner for the conditions to which it is subjected. Insulated covering of conductors is one means of making the conductor insulated.

(47) "Insulation (as applied to cable)." That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.

(48) "Insulation shielding." An envelope which encloses the insulation of a cable and provides an equipotential surface in contact with cable insulation.

(49) "Isolated." An object that is not readily accessible to persons unless special means of access are used.

(50) "Manhole." A subsurface enclosure which personnel may enter and which is used for the purpose of installing, operating, and maintaining equipment and/or cable.

(51) "Neutral." A system in which one conductor is used as the neutral for one or more circuits; one conductor may be used as the neutral for both primary and secondary circuits of a distribution system.

(52) "Pole." Any device used to support a power distribution or transmission line. The pole may be made of any substance including wood, concrete, metal, is usually cylindrical in shape and comparatively slender. It is the upright standard to which is affixed part of the power distribution and transmission line system as defined in this chapter.

(53) "Portable ladder." As used in this chapter means a ladder capable of being moved by hand or manually and one which is usually moved into position by hand.

(54) "Power dispatcher (load dispatcher or system operator)." A person who has been designated by the employer as having authority over switching and clearances of high voltage lines and station equipment.

(55) "Protective devices." Those devices such as rubber gloves, rubber blankets, line hose, rubber boots, or

other insulating devices, which are specifically designed for the protection of employees.

(56) "Public highway." For the purpose of these rules shall include every way, land, road, street, boulevard, and every other way or place in the state open as a matter of right to public vehicular travel, both inside and outside the limits of cities and towns, regardless of ownership.

(57) "Pulling tension." The longitudinal force exerted on a cable during installation.

(58) "Qualified person or qualified employee." A person who is familiar with the construction of, or operation of such lines and/or equipment that concerns his position and who is fully aware of the hazards connected therewith, or, one who has passed a journeyman's examination for the particular branch of the electrical trades with which he may be connected.

(59) "Secured ladder." A ladder which is not capable of being dislodged from the top by lateral, or jerking motion(s).

(60) "Sheath." As applied to tools carried in lineman's tool belt shall mean a sheath that effectively covers the tool and prevents such tool from falling from the belt.

(61) "Switch." A device for opening and closing or changing the connection of a circuit. In these rules, a switch is understood to be manually operable, unless otherwise stated.

(62) "Tag." A system or method of identifying circuits, systems, or equipment for the purpose of alerting employees and others that the circuit, system, or equipment is being worked on.

(63) "Rubber." Any goods, equipment, or tool made out of either natural or synthetic rubber.

(64) "Unstable material." Earth material, other than running, that because of its nature or the influence of other conditions, cannot be depended upon to remain in place without extra support, such as would be furnished by a system of shoring.

(65) "Vault." An enclosure into which personnel may enter and used for the purpose of installing, operating, or maintaining equipment and cable.

(66) "Voltage." The effective (rms) potential difference between any two conductors or between a conductor and ground. Voltages are expressed in nominal values. The nominal voltage of a system or circuit is the value assigned to a system or circuit of a given voltage class for the purpose of convenient designation. The operating voltage of the system may vary above or below this value.

(67) "Voltage of an effectively grounded circuit." The voltage between any conductor and ground unless otherwise indicated.

(68) "Voltage of a circuit not effectively grounded." The voltage between any two conductors. If one circuit is directly connected to and supplied from another circuit of higher voltage (as in the case of an auto–transformer), both are considered as of the higher voltage, unless the circuit of lower voltage is effectively grounded, in which case its voltage is not determined by the circuit of higher voltage. Direct connection implies electric connection as distinguished from connection merely through electromagnetic or electrostatic induction. Low voltage includes voltages from 100 to 750 volts. High voltage shall mean those voltages of 751 volts to 230,000. Extra high voltage means any voltage over 230,000 volts. Where the words "high voltage" are used in this chapter it shall include extra high voltage, unless otherwise specified.

[Order 76–38, § 296–45–65005, filed 12/30/76.]

WAC 296–45–65009 Employer's responsibility. (1) The employer shall provide and maintain the necessary protective devices specified in these rules and require the employees to use them properly.

(2) There shall be installed and maintained in every fixed establishment employing eight or more persons a safety bulletin board of a size to display and post safety bulletins, newsletters, posters, accident statistics and other safety educational material. It is recommended that safety bulletin boards be painted green and white.

(3) The employer shall require the foremen to observe and enforce all safety rules and shall furnish a copy of the electrical workers' safety rules to each employee who is covered by these rules.

(4) The employer shall appoint only competent workers to supervise other employees and those appointed shall be responsible for the safety of the employees under their supervision.

(5) The employer shall hold safety meetings at least once a month, which meetings shall be held at a reasonable time and place as selected by the employer. The employer shall require all employees subject to provisions of this chapter to attend said meetings: *Provided,* That employees whose presence is otherwise required by reason of an emergency or whose function is such that they cannot leave their station or cease their work without serious detriment to the service provided, such as dispatcher, may be excused from such meeting under those circumstances.

Minutes shall be kept of each safety meeting and retained for a period of one year.

(6) The employer or a representative(s) designated by him shall investigate all accidents or injuries of a serious nature and, where possible, take the proper remedial steps to prevent the occurrence of similar accidents.

(7) The employer shall furnish instructions stating the proper procedure in event of an emergency, which shall include the names of those individuals to be notified and methods of contacting them.

(8) The employer shall provide and make available to all employees accident report and safety suggestion forms.

(9) In the case of fatal accident, immediate notice shall be given by the employer or his authorized representative either by telephone or telegraph (collect) to the department of labor and industries, division of industrial safety and health, Olympia, Washington, or any of its branch offices. All such notices shall include time, place, and date of the accident and the employer's name.

(10) Nothing contained within this chapter shall prohibit an employer or his authorized representative from

disciplining employees for failure to comply with the provisions of this or any other safety code.

[Order 76-38, § 296-45-65009, filed 12/30/76.]

WAC 296-45-65011 Foreman's responsibility. (1) Every foreman shall understand these and any other applicable safety rules and comply therewith. Foremen shall require all employees under their direction or supervision to read this chapter and the provisions contained therein and require every employee subject to this chapter to be able to apply this chapter and any provision of this chapter on a day-to-day basis.

(2) Foremen shall inform employees under their supervision or direction of the type and voltage of circuits on or near which the employees are to work.

(3) Foremen shall require all employees under their supervision to properly use safety devices and equipment, including barricades, warning flags or signs, or any other device called for to protect employees.

[Order 76-38, § 296-45-65011, filed 12/30/76.]

WAC 296-45-65013 Foreman-employee responsibility. (1) An employee shall protect his climbing and working space at all times if the conductors are so spaced that in climbing or working he will be, or where it is possible to come within, the minimum required distances specified in these rules.

(2) Foremen or supervisors shall in good faith consider verbal or written reports of hazardous conditions and shall, as soon as practicable, investigate and remedy same if warranted.

(3) When hazards are reported by employees, foremen and others having authority shall accept the report in a cooperative manner, and in no case shall an employee be reprimanded or penalized for reporting hazards or potential hazards.

(4) Foremen shall require all employees under their supervision to keep their belts, spurs, and straps in good working condition. When straps and belts are in poor condition or defective, they shall not be used.

(5) Before leaving a jobsite, foremen shall correct or arrange to give warning of any condition which might result in injury to employees.

(6) No employee shall be permitted or allowed to remain on the jobsite when under the influence of any intoxicating beverage or controlled substance or substances: *Provided*, That if an employee is taking prescription medication under the direction of a practicing physician and such prescription does not interfere with the safe performance of the work assigned, such employee may be permitted to work.

(7) No intoxicating beverages or controlled substances shall be consumed on the jobsite other than prescription medication as set forth above.

[Order 76-38, § 296-45-65013, filed 12/30/76.]

WAC 296-45-65015 Work required of foremen. (1) A foreman cannot properly supervise the work and look out for the safety of employees under his direction if required to work as a foreman and a lineman at the same time.

(2) Foremen should be constantly alert and shall not be required to serve in such dual capacity, except in crews of not more than two linemen, in which case they may work as one of the linemen.

(3) In crews of two linemen or less, each lineman may have a groundman but, if additional linemen or groundmen are added to the crew, the foreman shall confine his activities to supervising the work, as exhibited below:

Type of Crew	Minimum Requirements
2 linemen	One lineman as man-in-charge.
2 linemen plus 1 groundman	One lineman as man-in-charge or climbing foreman.
2 linemen plus 2 groundmen	One lineman as man-in-charge or climbing foreman.
2 linemen plus any combination of 3 linemen or groundmen	One nonclimbing foreman.

[Order 76-38, § 296-45-65015, filed 12/30/76.]

WAC 296-45-65017 Employee's responsibility. (1) Employees shall not engage in horseplay or scuffling while on the job or jobsite and the employer shall not permit horseplay or scuffling while on the jobsite or otherwise in the course of employment.

(2) During such time as any employee is working on or near any energized line or energized equipment in excess of 750 volts there shall be no talking or communication other than that which is absolutely necessary and essential for the safe and proper performance of the work. Should there be communication or talk from a person other than an employee, the work shall stop until such time as the distraction ceases.

(3) Employees shall report any hazardous or potentially hazardous condition, operation, means, or work in a constructive manner and shall not engage in personality conflicts.

(4) Neither the employer nor the employees shall throw or permit anything to be thrown from elevated position(s) or poles to the ground or lower level, nor shall anything be thrown from the ground or lower level to an elevated position, whether that elevated position is on a pole, aerial manlift or otherwise.

(5) Employees shall report all injuries, regardless of severity, to the employer or designated representative. Report forms furnished by the employer should be used.

[Order 76-38, § 296-45-65017, filed 12/30/76.]

WAC 296-45-65019 First aid. In addition to complying with the first aid provisions as found in WAC 296-24-060 through 296-24-073, all employees whose

duties require them to work on energized wires, equipment, or to climb poles or related structures, shall take an approved course in controlling bleeding and cardiopulmonary resuscitation, and

(1) All linemen shall be instructed in pole-top rescue and become and remain proficient in its application.

(2) It is recommended that all employees receive basic first aid training.

(3) Safety suggestion forms should, where possible, be used for suggesting the elimination of hazardous conditions and such reported suggestions shall be retained by the employer or his authorized representative.

[Order 76-38, § 296-45-65019, filed 12/30/76.]

WAC 296-45-65021 Tools and protective equipment. (1) Protective equipment.

(a) Rubber protective equipment shall be in accordance with the provisions of the American National Standards Institute (ANSI), ANSI J6 series as revised in 1971, as follows:

Item	Standard
Rubber Insulating Gloves	J6.6-1971 Edition
Rubber Matting for Use Around Electrical Apparatus	J6.7-1971 Edition
Rubber Insulating Blankets	J6.4-1971 Edition
Rubber Insulating Hoods	J6.2-1971 Edition
Rubber Insulating Line Hose	J6.1-1971 Edition
Rubber Insulating Sleeves	J6.5-1971 Edition

(b) No protective equipment or material other than rubber shall be used: *Provided*, That such other nonconductive equipment may be used if it provides equal or better (dielectric) electrical and mechanical protection than rubber protective equipment: *Provided*, That the employer obtain before placing in service, manufacturer's data or other data to demonstrate that such nonrubber protective equipment provided equal or better electrical and mechanical protection than approved rubber equipment.

(c) Protective equipment shall not be used at voltages in excess of that for which the manufacturer has supplied data to the employer demonstrating that it is fit for such voltages.

(d) No protective equipment shall be modified, altered, or used for purposes other than those for which it is designed unless and until the manufacturer has, in writing, agreed or suggested that there be such modification, alteration, or use.

(e) High voltage rubber gloves shall have and pass a minimum dielectric test of at least 10,000 volts.

(f) Each rubber glove before it is used shall be inspected for defects and an approved air test performed. If, upon inspection, rubber gloves are either defective or appear to be defective, they shall not be used.

(g) Before being placed in service, all rubber protective equipment shall be numbered and records kept for test purposes and assignment.

(h) Rubber protective equipment shall not be used unless it has been dielectrically tested within six months and bears marking or identification of the date of the dielectric test: *Provided*, That all rubber gloves and rubber sleeves which are in service must be dielectrically tested every three months and shall not be used unless they have been tested within three months and bear marking or identification of the date of the last dielectric test.

(i) Whenever any rubber protective equipment is dielectrically tested, such testing shall be performed by a person or persons familiar with the testing procedure and in a facility which meets the recognized standards in the industry for such testing. All rubber gloves that are in service shall be tested at a voltage twice the amount for which such rubber equipment is used. Whenever a dielectric test is conducted, the rubber protective equipment shall also be visually inspected in detail for defects.

(j) Approved protectors shall be worn at all times over rubber gloves. Inner liners may be worn if desired.

(k) Rubber gloves when not in use shall be carried in an approved bag provided and designed for that purpose. It shall be provided by the employer and made available to the employees.

(l) Approved rubber gloves and carrying bag shall be assigned to each employee who works with, or is exposed to energized parts.

(m) Rubber protective equipment shall not be vulcanized or patched.

(n) A compartment or box shall be provided on each electric line truck, which box or compartment shall be used for storing rubber protective equipment. No equipment shall be stored in said compartment or box which can or could cause damage to the rubber equipment or goods placed in the compartment or box. Additionally, a separate container or compartment shall be provided for rubber blankets.

(o) Line hose shall not be doubled on themselves at any time. All blankets before storage must be wiped clean and rolled, not folded, before being placed in the container or box.

(p) Protective line equipment of material other than rubber shall be kept clean and visually inspected before each use.

(q) If protective line equipment of material other than rubber is found to be substantially defective or unsuitable for the purpose for which it is designed and intended, said protective line equipment shall not be used for personal protection of employees as may be required in Table 1 of this chapter. Said protective line equipment shall be marked defective but may be otherwise used unless the defect or damage to said protective line equipment creates additional safety hazards.

(r) Line hose or similar type of equipment shall not be used on voltages in excess of 15,000 volts as measured from phase to phase unless the manufacturer specifies otherwise.

(s) All protective hats shall be in accordance with the specifications of ANSI Z89.2-1971 Edition Industrial Protective Helmets for Electrical Workers, Class B, and

shall be worn at the jobsite by employees who are exposed to overhead or electrical hazards.

(2) Personal climbing equipment. All lineman body belts, safety straps, lanyards, hooks, and other similar equipment shall comply to this chapter. This rule shall not apply to personal climbing equipment in use at the effective date of this chapter during its lifetime provided such equipment is maintained in good condition and in accordance with the applicable safety rule and requirement in effect at the time such equipment was obtained.

(a) Safety lines shall not be used for shock loading and shall be used only for emergency rescue. All safety lines shall be a minimum one-half inch diameter and three- or four-strand first grade manila or its equivalent in strength (2,650 pounds) and durability.

(b) Defective ropes shall not be used and shall be replaced.

(c) Employees, when working from a hook ladder, must either belt themselves securely to the ladder, attach themselves to the structures by means of a safety line, or belt themselves to ladder safety equipment, which shall consist of a safety rope or belting threaded through the rungs or secured to the ladder at intervals of not more than three feet.

(d) Body belts with straps or lanyards shall be worn by employees working at an elevated position such as on poles, towers, or similar structures: *Provided*, That body belts and lanyards need not be used by employees while erecting transmission towers. Body belts and straps shall be inspected each day for defects before use. Defective body belts and straps shall not be used.

(e) Safety straps shall not be placed around poles above the cross-arm except where it is not possible for the strap to slide or be slipped over the top of the pole by inadvertence of the employee. Neither end of the strap shall be allowed to hang loose or dangle while the employee is ascending or descending poles or other structures.

(f) Body belts and safety straps shall not be stored with sharp-edged tools or near sharp objects. When a body belt, safety strap and climbers are kept in the same container, they shall be stored in such a manner as to avoid cutting or puncturing the material of the body belt or safety strap with the gaffs or climbers.

(g) Employees shall not attach metal hooks or other metal devices to body belts. Leather straps or rawhide thongs shall have hardwood or fibre crossbars. Leather straps and rawhide thongs shall not have metal or other conductive crossbars on them.

(h) Climbing gaffs shall be kept properly sharpened and shall be at least 1-1/8 inches in length.

(3) Ladders.

(a) Portable metal or other portable conductive ladders shall not be used on or near energized line or equipment except where nonconductive ladders present a greater electrical hazard than conductive ladders. A greater electrical hazard would be static electricity such as might be found in extra high voltage substations. All conductive or metal ladders shall be prominently marked and identified as being conductive and shall be grounded when used near energized lines or equipment.

(b) All ladders including hook type ladders used in structures shall be secured to prevent the ladder from being accidentally displaced.

(c) All ladders shall be handled and stored in such a manner as to prevent damage to the ladder.

(d) When ascending or descending a ladder, the employee shall face the ladder and have free use of both hands.

(e) All defective ladders shall be taken out of service and labeled as defective.

(f) When a ladder is being used which is not fixed or otherwise secured, there shall be an attendant to hold the ladder and watch traffic when the work is being done on streets, alleys, sidewalks, or in industrial plants or other places where there exists the possibility of accidental contact with the ladder by third persons or vehicles.

(g) When working on the ladder, employees shall, where possible, tie the top of the ladder to a substantial object to prevent falling unless the ladder is equipped with approved hooks which may be used for the same purpose.

(h) Portable ladders shall not be moved with employees on the ladder.

(i) No employee shall ascend or descend a rolling ladder while it is moving.

(j) No employee shall stand on the top two steps of a step ladder.

(k) No employee shall use a step ladder as a straight ladder.

(l) All ladders shall be of sufficient strength for the use to which they are placed.

(m) Ladders shall always be placed on a secure footing with both legs resting firmly on the lower surface.

(n) Ladders made by fastening cleats or similar devices across a single rail shall not be used.

(4) Hot line tools.

(a) Only hot line tools having manufacturer's certification of withstanding the following minimum tests shall be used:

(i) 100,000 volts per foot of length for 5 minutes when the tool is made of fiberglass; or

(ii) 75,000 volts per foot of length for 3 minutes when the tool is made of wood; or

(iii) Other tests which equal or exceed (i) and (ii) of this subsection.

(b) All hot line tools shall be visually inspected each day before use. All hot line tools shall be wiped clean before being used.

(c) Defective hot line tools shall not be used and shall be marked as defective and turned in for repair or replacement.

(d) Hot line tools and ropes shall be inspected each day before use. They shall be stored and maintained and used in such a manner as to prevent damage. Hot line tools and ropes shall not be used for purposes other than line work. Wood hot sticks shall be maintained with a surface coating of varnish or other approved treatment to prevent the absorption of moisture into the stick. The

maintenance, inspection, storage, and use of such equipment shall be in conformance with the methods and standards recognized by manufacturers and the industry.

(5) Measuring ropes and tapes.

(a) Measuring ropes or measuring tapes which are metal or certain conductive strands shall not be used when working on or near energized lines or parts.

(6) Hand tools.

(a) All power hand tool switches shall comply with the provisions of WAC 296-24-650 through 296-24-67005.

(i) Be equipped with three-wire cord having the ground wire permanently connected to the tool frame and having a means for grounding the other end of the cord except when such three-wire cord increases the hazard to the employees or where the hand held tool is double insulated and permanently labeled "double insulated."

(ii) Be connected to the power supply by means of an isolating transformer, or other isolated power supply.

(b) All hydraulic tools which are used on or around energized lines or equipment shall use nonconductive hoses having approved strength for the normal operating pressures. The provisions of WAC 296-155-360 (4)(a) and (b) are mandatory.

(c) All pneumatic tools which are used on or around energized lines or equipment shall:

(i) Have nonconducting hoses having approved strength for the normal operating pressures, and

(ii) Have an accumulator on the compressor to collect moisture.

(7) Hand axes shall not be used when working overhead.

(8) Small tools carried in body belts shall be placed so as to present the least danger of coming into accidental contact with live parts.

(9) All tools carried in workers' body belts shall be sheathed: *Provided*, That tower erectors need not comply with this rule except when working on or above electric power equipment or lines.

(10) Tools other than those which are carried in workers' body belts shall not be carried up or lowered down poles or similar structures in belts but shall be raised and lowered by means of an approved container or hand line.

(11) All tools shall be kept in good working condition and shall be properly stored. Defective tools shall be taken out of service.

(12) Tools and loose material shall not be left at the top of poles or structures.

(13) Tools shall be placed where they will not be the cause of injury due to stepping or tripping on them.

(14) The surface and surface preservation of wood tools such as ladders, pike poles, switch sticks, insulating platforms used in electrical work shall be maintained. Only transparent preservatives shall be used. Where ladders and pike poles are not used on or near energized lines and are inspected monthly by qualified inspectors, they may be painted.

(15) Scaffolds shall be constructed and used in conformance with the general safety and health standards (WAC 296-24-82503) and the safety standards for construction work (WAC 296-155-485) of the state of Washington.

(16) Wearing apparel.

(a) Goggles, rubber gloves, respirators, and other such personal protective devices shall not be interchanged among employees unless they have been sanitized.

(b) Workers shall wear clothing appropriate to the season and the kind of work being performed: *Provided*, That shirts or jumpers with full length sleeves rolled down and protective hats shall be worn when working on or near live parts or while climbing poles.

(c) When working on or near energized parts, employees shall not wear loose dangling watch chains, key chains, or unnecessary metal of any type, and should not wear coats with metal zippers.

(17) When working at night, spotlights or portable lights for emergency lighting shall be provided and used as is necessary to perform work safely.

(18) Sanitary facilities. The requirements of WAC 296-24-120 through 296-24-130(13) shall be complied with.

(19) Industrial hygiene. The requirements of chapter 296-62 WAC are mandatory unless they are inconsistent with this chapter.

(20) Fire extinguishers. Employees should know the location and how to operate fire extinguishers in the worksite vicinity.

(21) Foreign attachments and placards. Nails and unauthorized attachments should be removed before climbing above such attachments. When through bolts present a hazard to climbing, they shall be trimmed to a safe length.

(22) Working near or over water. When employees are engaged in work over or near water and when the danger of drowning exists, suitable flotation protection shall be provided and worn as required by WAC 296-24-086.

[Order 76-38, § 296-45-65021, filed 12/30/76.]

WAC 296-45-65023 Clearances, operating power lines and equipment. Clearances, directly under the control of the power dispatcher or person acting in that capacity, shall be requested and executed by observing the following rules:

(1) Employers shall designate a qualified person or persons to act in the capacity of power dispatcher, also known as load dispatcher or system operator.

(2) No switch shall be operated and no clearance tag placed or removed without an order from the power dispatcher having jurisdiction, except where standing orders or regulations have been given covering such operations.

(3) In all cases, switching orders must be given directly to the employees in charge of operating the switches by the power dispatcher who has jurisdiction and such communications *must be repeated back word for word to the speaker.* When requesting clearance on lines under the control of the power dispatcher, a person requesting the clearance shall obtain the name of the dispatcher to whom the request was made and the dispatcher shall obtain the name of the person requesting

the clearance; and assure himself that the person is qualified to receive such a clearance.

(4) Should it become necessary for a person holding a clearance to leave the job, he shall relinquish his clearance to the dispatcher and a new clearance shall be taken by another qualified person.

(a) In the event of an occurrence which renders it impossible to contact the individual who had a clearance on a given circuit or piece of equipment, that clearance may be released only by the next higher available official who is familiar with the work and has jurisdiction over the circuit or equipment.

(5) The dispatcher shall order clearance tags printed on red cardboard, or equivalent, not less than 2-1/4 inches by 4-1/2 inches, attached to all switches opened or checked open to provide clearance on any line or equipment for employees to work thereon.

(6) Clearance tags attached to substation control devices and to line switches beyond the switchyard of any substation; indicating the limits of the clearance involved; shall state the designation of the switch opened or checked open and tagged; the name of the person to whom the clearance is to be issued; the date and time the switch was opened or checked open; the name of the dispatcher ordering the switching and tagging; and the name of the person doing the switching and tagging.

(7) Clearance tags attached to airbreak switches opened within a substation shall indicate clearly that the line or equipment is cleared for employees to work thereon.

(8) In cases where more than one person will require clearance on the lines or parts of equipment, the power dispatcher must order complete sets of clearance tags for each person requesting clearance.

(9) When two or more crews are engaged in work at any one location on account of emergency or for other reasons, the proper authority may designate one of the foremen to act as foreman of the combined crews for the purpose of obtaining clearances only.

(10) To meet unforeseen conditions, it will be permissible to tag isolated switches for the dispatcher and issue clearances against this tag. In tagging out inter-utility tie lines, the open switches on the foreign end of the line shall be tagged for the foreign dispatcher requesting the outage who will issue clearances to individuals of his organization against this tag.

(11) No work shall be performed on lines or equipment until the power dispatcher in control of such lines or equipment has clearly granted the clearance. The power dispatcher shall never grant a clearance on lines or equipment before all necessary protective tags are applied, and his own records of such clearance are clear and complete. Before considering any line or equipment to be de-energized, the power dispatcher shall assure himself that all switches which could possibly energize the line or equipment in question have been opened, all phases checked open, the switches tagged and, if possible, locked in the open position.

(12) Metal-clad, draw-out switchgear of over 750 volts in which the physical separation of the disconnecting parts is not visible may be used to clear a line or equipment, provided the switchgear is equipped with:

(a) A positive positioning means to insure that the disconnecting contacts are separated;

(b) An isolating shutter which moves into place between the separated contact for circuit isolation; and

(c) A mechanically-connected indicating means to show that the shutter is in place.

(13) In all other cases, only a visible break of all phases shall be regarded as clearing a line or equipment.

(14) Where two or more 5000-volt (or higher) lines are on the same pole or bus structure, arrangements must be made for simultaneous clearances on all such lines unless the person who requested the clearance specifically states that less will be sufficient.

(15) In giving a clearance, the power dispatcher shall make certain that the man to whom the clearance is given is fully aware of the extent or the limits of his clearance.

(16) The person or persons to whom a clearance has been given shall make certain that all protective grounding or short-circuiting devices installed by him or persons under his direction are removed before clearing the line or equipment to the dispatcher for service.

(17) After receiving notification from the dispatcher that the necessary switching has been done, the person making the request shall take the following precautionary steps before any employee comes in direct contact with the circuit or equipment:

(a) The circuit or equipment shall be tested by generally accepted methods to make certain that it is de-energized.

(b) The circuit or equipment shall be grounded and shorted as prescribed in this section.

(18) No person shall make contact with a circuit or equipment that has not been taken out of service to be worked on until he has the circuit or equipment cleared and tagged by himself or is working directly under the supervision of one who has the circuit or equipment cleared and tagged for himself.

(19) No tag shall be removed and no lines or equipment energized until the clearance has been released to the dispatcher.

(20) There shall be a tag used on any switch, regardless of the voltage or type of construction, where workers are likely to be endangered by the closing of such switch and/or where the switch is not directly visible to the employee protected by the open switch.

[Order 76-38, § 296-45-65023, filed 12/30/76.]

WAC 296-45-65025 Grounding. (1) When a line which is energized or which may be energized at over 750 volts is removed from service for the purpose of work thereon, the lines shall be considered and worked on as energized until such line is cleared, tagged and grounded.

(2) Grounding equipment.

(a) Grounding equipment shall be available for use when working on deenergized circuits or parts.

(b) Grounding equipment itself shall be of approved carrying capacity to actuate protective devices such as oil circuit breakers, relays, without destroying the ground equipment itself.

(c) If the work is on new construction, definitely known to be dead and not cut into any point where it is possible for anyone to energize it by mistake, the grounding rule is not compulsory but is advisable when the lines extend a considerable distance.

(3) Preliminary grounding. Preliminary grounding or other testing shall first be done to determine that the line or equipment to be grounded is deenergized.

(4) Preliminary grounding shall be done as follows:

(a) A conductor, preferably stranded copper cable, shall be attached to a reliable ground. The use of chain is prohibited.

(b) A dry hand line shall then be thrown over the wires to be grounded, attached to the preliminary grounding conductor and, with all men standing in the clear, the grounding conductor may be pulled over the lines.

(c) Care must be taken that every line wire is in contact with the preliminary grounding conductor.

(d) The regular grounds shall then be placed.

(e) Preliminary grounding need not be used when the presence of other energized lines creates additional hazard through the use of preliminary ground, provided an approved test is made to ascertain that the lines to be grounded are deenergized.

(5) The following are methods of preliminary tests to determine whether a line is deenergized.

(a) A line may be buzzed out by extending the hot line tool equipment with a substantial piece of metal on the end to within a close distance of the line.

(b) Approved testers may be used in some locations, but these shall only be used and accepted as approved testers when such tester has been tested immediately before and after on another line known to be energized or other equivalent testing methods and has been proven to be in good working condition.

(6) Communication conductors. Bare wire communication conductors on power poles and structures are subject to these rules as energized lines and voltages in excess of 750 volts unless protected by insulating materials.

(7) Attaching grounds.

(a) When attaching grounds, the ground end shall be attached first, and the other end shall then be attached and removed by means of insulated tools or approved devices.

(b) When removing grounds, the grounding device shall first be removed from the line or equipment by using insulated tools or other approved devices.

(c) Grounds shall be placed between work location and the sources of energy and as close as practicable to the work location, or grounds shall be placed at the work location. If work is to be performed at more than one location in a line section, the line section must be grounded and short-circuited at one location in the line section and the conductor to be worked on shall be grounded at each work location. The minimum distance shown in Table 1 shall be maintained from ungrounded conductors at the work location. Where the making of a ground is impracticable, or the condition resulting therefrom would be more hazardous than working on the lines or equipment without grounding, the grounds may be omitted, provided that all work is done according to this chapter as if the line or equipment is energized.

(8) Testing without grounds.

(a) Grounds may be temporarily removed only when necessary for testing purposes: *Provided*, That during such period of time as the grounds are removed, care shall be exercised during that test procedure.

(9) Grounding to tower shall be made with an approved tower clamp capable of conducting the anticipated fault current.

(10) A ground lead, to be attached to either a tower ground multiple ground system or driven ground, shall be capable of conducting the anticipated fault current and shall have a minimum conductance of No. 2 AWG copper.

(11) The grounding set shall be firmly connected to a reliable ground at the ground end first.

(12) Grounds shall be placed on both sides of the section of line on which work is to be done, with the following exceptions:

(a) Where visible openings, such as airbreak switches, disconnects, disconnected jumpers, etc., are within sight of the job, disconnecting the line from its source of power, and no energized high voltage line crosses over or below the line section being worked on, and no other source of feed exists to this line section. One ground installation on the side away from a visible opening may be considered to be approved protection.

(b) One ground is adequate when installed at the point where work is being performed if the line is not to be opened or if there is no source of supply beyond the ground or no possibility of contact with other energized lines.

(13) The ground set shall make firm contact with each conductor of the circuits being worked.

(14) In cases where the conductor separation at any pole or structure is so great as to make it impractical to apply shorts on all conductors, and where only one conductor is to be worked on, only that conductor which is to be worked on need be grounded.

(15) No ground shall be removed until all employees are clear of the energized wire or equipment. When removing the grounding set, it shall be disconnected from the line conductors first and lowered to a point below all energized conductors before the ground end is disconnected.

[Order 76-38, § 296-45-65025, filed 12/30/76.]

WAC 296-45-65027 General requirements. (1) The live-line bare-handed technique is prohibited on voltages of 750 volts or more.

(2) Number of men required to do work safely.

(a) Two competent electrical workers shall be required when performing work on energized high voltage lines or equipment or within the distances in Table 1. One of them shall serve principally as a standby man

who shall be so located that he may physically reach the other employee in the event of an accident either with his hand or with a hot stick. The stand-by shall be so positioned as to be able to observe the other employee, his bodily movements, and verbally warn of any impending dangers. In no case when working in pairs shall employees work simultaneously on energized wires or parts of different phases or polarity.

(b) In cases of necessity the stand-by man may temporarily assist the other employee provided that they both work on wires or parts of the same phase or polarity. Both employees shall so position themselves so that the presence of the second man does not increase the hazard.

(c) While on patrol at night and operating a motor vehicle on public highways, there shall be two employees, at least one of whom shall be a journeyman lineman or otherwise a competent or qualified employee. If repair to line or equipment is found to be of such nature as to require two linemen, work shall not proceed until additional help has been obtained provided that in cases of emergency where delay would increase the danger to life, limb, or substantial property, one employee may clear the hazard without assistance.

(3) When only one qualified employee is available and he is required to work on high voltage, these circuits shall be de-energized while the work is performed except for emergencies.

(4) The provisions of subsection (2) of this section do not apply in the following circumstances:

(a) When re-fusing circuits or equipment with a hot stick.

(b) When operating switches by means of operating handle or switch sticks.

(c) When installing or removing a hot line clamp connection with an approved hot stick on single phase line or apparatus, providing that the connection or disconnection does not interrupt or pick up a load.

(5) Initial determination.

(a) Before any work is performed, the location of energized lines and their condition, the location and condition of energized equipment, the condition of the poles, the location of circuits and equipment including power communication lines, CATV and fire alarm circuits, shall be determined as shall any other particular hazard of a particular work site.

(b) No work shall be performed on energized lines or parts until the voltage of such equipment and lines is determined.

(6) Employees shall not stand on or otherwise come in contact with transformer cases or similar equipment while working on energized lines or equipment.

(7) Employees and conducting objects shall not come within the minimum distances as set forth in Table 1 of energized lines or conductors, except:

(a) When working on voltages of 5 Kv between phases or less employees may come within the distances as set forth in Table 1 if and so long as the employees are wearing approved rubber gloves, or use approved line hoses, rubber blankets, guards or barriers or similar approved protective equipment in such a manner as to protect against accidental contact, if the rubber gloves and other protective equipment is used in an approved manner.

(b) Nothing contained herein shall prevent the use of approved hot sticks on any voltage.

(8) Rubber gloves shall be worn or hot sticks used when placing protective equipment on or around energized conductors of voltages of 750 to 5,000 volts.

(9) Rubber gloves shall be worn or hot sticks used when removing tree branches, limbs, or similar objects from contact with high voltages or when such branch, branches, limbs or other conducting object is within the prohibited distance of Table 1. Rubber gloves shall be worn whenever the employee can touch or come within the prohibited distances as provided in Table 1.

(10) Employees should not wear rubber gloves while ascending or descending a pole until such time as the employee becomes so positioned that he is likely or capable of touching voltages of 750 or more.

(11) Rubber gloves, line hoses, rubber blankets, and other recognized protective equipment are barriers when used. Such barriers can be used on voltages of 5,000 or less between phases.

(12) It shall not be permissible to consider one part of a high voltage switch or disconnect as de-energized for the purpose of doing work on it if the remainder of the switch or disconnect remains energized unless approved barriers are erected which will prevent employees who are doing the work on such equipment from coming in direct contact with the energized parts.

(13) Conductor support tools such as link sticks, strain carriers, and insulator cradles may be used: *Provided*, That the clear insulation is at least as long as the insulator string or the minimum distance specified in Table 1 for the operating voltage.

(14) TABLE 1:

Voltage Range (phase to phase) Kilovolt	Minimum Working and Clear Hot Stick Distance
.75 up to 15	2 ft. 0 in.
15 up to 35	2 ft. 4 in.
35 up to 46	2 ft. 6 in.
46 up to 72.5	3 ft. 0 in.
72.5 up to 121	3 ft. 4 in.
121 up to 145	3 ft. 6 in.
145 up to 169	3 ft. 8 in.
169 up to 242	5 ft. 0 in.
242 up to 362	7 ft. 0 in.[1]
362 up to 552	11 ft. 0 in.[1]
552 up to 765	15 ft. 0 in.[1]

[1]Note: For these voltages of 242 and up, the minimum working distances and the minimum clear hot stick distance at the work location may be reduced when and so long as such distances are not less than the shortest distance between the energized part and grounded surface.

(15) Foreign operations. All foreign operations as defined within this chapter conducted on or near power

lines or energized equipment shall maintain clearance according to the provisions of WAC 296-24-24019.

[Order 76-38, § 296-45-65027, filed 12/30/76.]

WAC 296-45-65029 Overhead lines. (1) General.

(a) When working on or with overhead lines, this section shall be complied with as well as the applicable divisions of any other section.

(2) Strength of span and its support.

(a) Precautions shall be taken to determine that the span and the supports thereof are of a strength so as to safely bear the weight of the employee(s) and the equipment used thereon.

(b) Before an employee climbs a pole, it shall be inspected or tested to determine that such pole is safe, both above and below the ground level. If the pole is found to be unsafe for climbing, it must be guyed or braced or otherwise supported in such a manner as to allow the employees to safely perform their work.

(c) Before moving conductors there shall be a thorough inspection for strength and good condition of the adjacent supporting poles, structures, and conductor supporting hardware. Approved safeguards shall be installed on such adjacent poles or structures as may be necessary to prevent unexpected or uncontrolled movement of these adjacent poles, structures or conductors supporting equipment or conductors.

(3) When setting, moving or removing poles using cranes, derricks, gin poles, A-frames, or similar equipment near energized lines or equipment, minimum clearances shall be maintained, as provided by Table 1 except when approved barriers or other line protecting devices have been installed.

(4) Temporary guard poles or structures. Guard poles, towers, or other guard structures installed for the purpose of protecting employees, lines, conductors or equipment during the course of construction shall be installed at the same clearance requirements as for permanent construction and with strength and safety factors as required to safely support the loads that may normally be imposed on them during their use.

(5) The safest possible working position shall be assumed before starting work in the vicinity of energized wires, lines, transformers or similar energized equipment.

(6) No work should be performed in inclement weather on high voltage equipment when conditions are such as to materially increase the hazards to the employees excepting emergency work necessary to restore service.

(7) While work is being performed overhead, tools and materials shall be placed in proper receptacles when not being used. Tools and materials shall not be thrown to or from the employees on the pole or other elevated position(s) but shall be raised and lowered by means of a handline and/or tool bag. Tools and loose materials shall not be left on poles, crossarms, ladders or other elevated structures or positions.

(8) Employees shall not work in elevated positions unless secured so as to prevent accidental falling. They shall be secured by a safety belt or other approved means except when ascending, descending or moving from one location to another while in an elevated position. Before an employee throws his weight on a belt, the employee shall determine that the snap or fasteners are properly engaged.

(9) When winches, trucks, or tractors are being used to raise poles, materials, to pull in wires, to pull slack or in any other operation, there shall be an operator at the controls unless the machinery or process is stopped.

(10) Foremen shall designate an employee to give signals when required.

(11) Raising poles, towers or fixtures in the close proximity of high voltage conductors shall be done under the supervision of a qualified employee.

(12) Employees shall not wear climbers on work where they are not required. Employees shall not continue to wear their climbers while working on the ground; except for momentary or short periods of time on the ground.

(13) After a capacitor has been disconnected from its source of supply, workers shall wait five minutes before short-circuiting and grounding them, unless the capacitor is equipped with an adequate grounding and/or short-circuiting device. Employees shall take care not to contact the terminals, jumpers, or line wires connected directly to capacitors until they have been properly short-circuited and/or grounded.

(14) After removal from service, short circuits shall remain on capacitors in storage until returned to service.

(15) Pulling or slacking shall be done only as directed by the lineman overhead while hoisting or lowering materials by means of a block.

(16) Steel cables shall not be used to raise transformers, poles or any other material except when the cable is rigged below all energized parts at a sufficient distance to prevent any possibility of the cable or conductive material being raised from contacting unguarded energized parts, unless adequately spread, guarded or clearance is maintained as provided in Table 1. The term "energized parts" in this section means wires or equipment carrying more than 300 volts.

(17) Employees shall not crawl over insulator strings but shall use a platform or other approved device to work from when making dead ends or doing other work beyond strings of insulators, at such distance that they cannot reach the work from the pole or fixture. While working on the platform or other device, they shall be secured with safety straps or a rope to prevent falling. The provision of this subsection does not apply to extra high voltage bundle conductors when the use of such equipment may produce additional hazard. Climbing over dead end assemblies is permissible only after they have been completed and pinned in the final position.

(18) When employees are working overhead, employees shall not dig or do any other work that exposes them to danger due to inattention of the work being performed overhead. Employees shall wear approved hard hats when it is necessary to be beneath overhead employees.

(19) Splicers platforms of the type commonly used for splicing or approved ladders securely hooked over or lashed to the strands may be used.

(20) When employees are required to climb through energized circuits of 2.1 KV or more, preventive measures shall be taken so as to minimize the possibility of contact with energized lines. This may include approved spreading and guarding of the energized conductors.

(21) Methods shall be used that will effectively prevent ropes, (excepting hot line ropes) including hand lines, equipment or materials passing through the conductor level from making contact with the energized conductor or equipment of voltages of 2.1 KV or more. This may include approved spreading or guarding.

(22) All lifting equipment shall be bonded to an effective ground or it shall be considered and worked as energized and barricaded when utilized within the prohibited distance of Table 1 or if during the use of such equipment it is possible that it could come within the prohibited distance of Table 1 it shall be considered energized and barricaded.

[Order 76-38, § 296-45-65029, filed 12/30/76.]

WAC 296-45-65031 Poles and pole settings. (1) All poles, the methods of use and installation of poles, insofar as they affect the employee safety, are subject to the relevant provisions of the electrical construction code, chapter 296-44 WAC.

(2) Pole holes shall not be left unattended or unguarded.

(3) Tag lines shall be of a nonconductive type when used in an area that will come within the prohibited distance of Table 1 or where it is possible that during use such line could come within the provisions of Table 1.

(4) Framing. During framing operations, employees shall not work under a pole or structure suspended by a crane, A-frame or similar equipment unless it is adequately supported.

[Order 76-38, § 296-45-65031, filed 12/30/76.]

WAC 296-45-65033 Transmission line construction. (1) Metal tower construction.

(a) When working with unstable material, the excavation for pad or pile-type footings in excess of four feet deep shall be either sloped to the angle of repose, or shored as provided in WAC 296-155-660 and 296-155-665. Ladders shall be used for ingress and egress to a pad or pile-type footing excavation, if such excavation is in excess of four feet in depth. Employees shall not enter excavation to clear, clean or free the auger unless shoring is first installed.

(b) A designated employee shall be used in directing mobile equipment when such equipment either is or could come within the area of the fault line of the footing excavation.

(c) No employee shall be permitted to remain in the footing when equipment is being spotted for placement or being moved within an area that is likely to disturb the soil of or in the area of the excavation. This rule applies to excavation regardless of whether the excavation is shored or not.

(d) When necessary to assure the stability of mobile equipment, the location of use for such equipment shall be graded and leveled.

(e) Tower assembly shall be carried out with a minimum exposure to employees for falling objects. Employees shall not work under overhead work unless it is required by the very process and there is no other feasible method of performing the work.

(f) During construction or assembly, guy lines shall be used to maintain and secure parts of sections in position in towers or equivalent means shall be used.

(g) Tower members and sections being assembled shall be supported by an approved method.

(2) No employees shall be permitted under a tower when it is in the process of erection or assembly, except as may be required to guide and secure the section being set.

(a) When erecting towers using hoisting equipment adjacent to energized lines or equipment, such lines or equipment shall be deenergized if practical. If the lines are not deenergized, additional caution shall be used, such as a competent qualified employee to watch in order to maintain the minimum clearance provided in Table 1.

(b) Erection cranes or similar equipment shall be set on firm, level foundations and when the equipment has outriggers, the outriggers shall be properly used.

(c) Tag lines shall be utilized to maintain control of tower sections until the section is positively secure.

(d) The load lines shall not be detached from the tower sections until the section is positively secure.

(e) Except during emergency restoration procedure, erection shall be discontinued in the event of high wind or other adverse weather conditions when such weather conditions materially increase the hazard of the work being performed.

(f) All equipment and rigging shall be regularly inspected and maintained in safe operating condition.

(g) Traffic controls shall be maintained and used when crossing highways and railways with equipment as required by the provisions of WAC 296-155-300 (7)(a) and (b).

(h) A designated employee shall be used and shall observe in order to assure that equipment being moved under or near energized lines or equipment maintains the minimum distance as required in Table 1.

(3) Stringing or removing deenergized conductors.

(a) When stringing or removing deenergized conductors, the provisions of this subdivision shall be complied with.

(b) Prior to stringing operations, there shall be a briefing with all affected employees, setting forth the plan of operation and specifying the type of equipment to be used, grounding devices and procedures to be followed, crossover methods to be employed, and the clearance authorization required, together with any other matters which the particular situation requires. Where conducting objects might contact, or come within the prohibited distance as set forth in Table 1, energized circuits, lines or where there might be a voltage build-

up, the conductor being installed or removed shall be grounded first or the employee isolated or insulated.

(c) If the existing line is to be deenergized, proper clearance authorization shall be secured, and the line grounded on both sides of the crossing or the line being crossed shall be treated as energized.

(d) When crossing over energized conductors in excess of 750 volts, rope, nets or guard structures shall be installed so as to prevent accidental contact with the energized conductor(s). Where reasonably practical, the automatic reclosing feature of the circuit interrupting device shall be made inoperative.

(e) When conductors are being strung in or removed, they shall be kept under positive control to prevent accidental contact with energized circuit.

(f) Guard structures members shall be of approved dimension, strength and securely supported to meet the purpose for which they are intended.

(g) Catch–off anchors, rigging and hoists shall be of ample capacity to prevent loss of the lines.

(h) Manufacturer's load rating shall not be exceeded for stringing lines, pulling lines, sock connections, and all load–bearing hardware and accessories.

(i) Pulling lines and accessories shall be inspected prior to each use and replaced or repaired when damaged or when there is a reasonable basis to doubt the dependability of such lines or accessories. The provisions of WAC 296–155–330 (3)(d)(ii) concerning splices shall not apply to stringing and removing of deenergized conductors.

(j) Conductor grips shall not be used on wire ropes unless designed for that particular purpose.

(k) When the conductor or pulling line is being pulled (in motion) employees shall not be permitted directly under overhead operations, nor shall any employee be permitted on the crossarm.

(l) A transmission clipping crew shall have a minimum of two structures clipped in between the crew and the conductor being sagged. When working on bare deenergized conductors, clipping and tying crews shall work between grounds at all times. The grounds shall remain intact until the conductors are clipped in except on dead end structures.

(m) Except during emergency restoration procedures, work from structures shall be discontinued when there exists adverse weather conditions such as high wind or ice on the structures which would make the work more hazardous than usual.

(n) Removing, stringing and clipping operations shall be discontinued during the process of an electrical storm when such storm reasonably presents an additional hazard.

(o) Reel handling equipment, including pulling and braking machines, shall have ample capacity, operate smoothly and be leveled and aligned in accordance with the manufacturer's operating instructions.

(p) Communication between the reel tender and pulling rig operator shall be provided and maintained.

(q) Each pull shall be snubbed or dead ended at both ends before subsequent pulls.

(4) Stringing near, above, below or otherwise adjacent to energized lines.

(a) Before stringing near, above, below, parallel to an existing line, there shall be a determination as to whether or not there exists a possibility of a dangerously induced voltage buildup, particularly during switching and grounding fault conditions. Where such possibility of danger does exist, employer shall comply with provisions of subdivision (3)(a) through (3)(j) of this subsection in addition to the provisions of subsection (3) of this section unless the line is worked as energized.

(b) When stringing adjacent to or near energized lines, the tension stringing method or other methods which preclude accidental contact between the lines being pulled and any employee shall be used.

(c) All pulling and tensioning equipment shall be isolated, insulated or effectively grounded.

(d) A ground shall be installed at the tensioning reel set–up in order to ground each bare conductor, subconductor and overhead ground conductor during stringing operations.

(e) During stringing operations, each bare conductor, subconductor and overhead ground conductor shall be grounded at the first transmission structure adjacent to both the tensioning and pulling set–up and in increments so that no point is more than two miles from a ground, and

(i) The grounds shall be left in place until the conductor installation is completed.

(ii) Such grounds shall be removed as the last step of aerial cleanup.

(iii) Except for moving type grounds, the grounds shall be placed and removed with a hot stick.

(iv) Conductors, subconductors and overhead ground conductors shall be grounded at all dead–end or catch–off points.

(f) A ground shall be located at each side and within 10 feet of working areas where conductors, subconductors or overhead ground conductors are being spliced at ground level. The two ends to be spliced shall be bonded to each other.

(g) All conductors, subconductors and overhead ground conductors shall be bonded to the tower at any isolated tower where it may be necessary to complete work on the transmission line.

(h) Work on dead–end towers shall require grounding on all deenergized lines.

(i) Removal of temporary guards: Temporary guards shall not be removed until the adjacent structures have been clipped: *Provided*, The guard structures may be removed if safety slings have first been installed on adjacent tower or structure.

(j) When performing work from the structure, clipping crews and all others working on conductors, subconductors, or overhead ground conductors shall be protected by individual grounds installed at each such work location.

[Order 76–38, § 296–45–65033, filed 12/30/76.]

WAC 296–45–65035 Substations. (1) Before work is performed on any electrically operated circuit breaker,

it shall be cleared from the line and the control switch at the breaker opened. Where circuit breakers are operated by springs, solenoids or compressed air, or similar means, proper precautions shall be taken to prevent unauthorized or accidental operation of the device. This provision does not preclude repairs or adjustments that present no hazard to the employee.

(2) Disconnecting switches must be operated with approved sticks provided for that purpose unless said switches are provided with an operating mechanism having an insulated or grounded handle.

(3) Handles for manual operation of oil circuit breakers shall not be left in their sockets.

(4) Approved insulated platforms or mats shall be provided and used by employees while working on any live part of the switchboard on which any wire or appliance carries a potential in excess of 300 volts.

(5) All generators and motors having a potential of more than 300 volts shall have an approved insulated platform or mat, so arranged so as to permit the attendant to stand upon such a platform or mat when working upon live parts of such generator(s) or motor(s).

(6) Work near energized equipment.

(a) When work is performed in an energized substation, authorization shall be obtained from the designated, authorized employee before work is started.

(b) When work is to be done in an energized substation, the following shall be determined prior to the commencement of work:

(i) What facilities are energized, and

(ii) What protective equipment and precautions are necessary for the safety of personnel.

(c) Extraordinary caution shall be exercised in the handling of busbars, tower steel, materials and equipment in the vicinity of energized facilities. The provisions of Table 1 shall be complied with.

(7) Barricades and barriers.

(a) Barricades or barriers shall be installed to prevent accidental contact with energized lines or equipment.

(b) Where appropriate, signs indicating the hazard shall be posted on or near the barricade or barrier. These signs shall comply with the provisions of WAC 296-155-300.

(8) Control panels.

(a) Work on or adjacent to energized control panels shall be performed by designated employees only.

(b) Precautions shall be taken to prevent accidental operation of relays or other devices due to jarring, vibration, or improper wiring.

(9) Mechanized equipment.

(a) Use of vehicles, gin poles, cranes and other equipment in restricted or hazardous areas shall at all times be controlled by a designated employee.

(b) All mobile cranes and derricks shall be effectively grounded when being moved or operated in close proximity to energized lines or equipment, or where there exists a reasonable possibility that said equipment could accidently move within the prohibited distance as specified in Table 1, or the equipment shall be considered energized.

(10) Storage.

(a) The storage requirements of WAC 296-24-21501 through 296-24-21505 are mandatory.

(11) Fences.

(a) When a substation fence must be expanded or removed for construction purposes, a temporary fence affording similar protection shall be provided and installed when the site is unattended, approved interconnection with ground shall be maintained between the temporary fence and permanent fence.

(b) All gates to all unattended substations shall be locked, except when work is in progress.

(12) Footing excavation.

(a) Excavation for auger, pad and piling-type footings for structures and towers shall comply with the provisions set forth for metal tower construction. (See WAC 296-45-65033.)

(b) No employee shall enter an unsupported auger-type excavation if such excavation is in unstable material. Necessary clean-out shall be accomplished without entry.

[Order 76-38, § 296-45-65035, filed 12/30/76.]

WAC 296-45-65037 Underground. (1) Protective barriers, or approved guards and warning signs must be erected before removing manhole covers or making excavations in places accessible to vehicular or pedestrian traffic.

(2) Whenever an opening is made in the street, it shall be properly guarded or covered until same is closed and whenever an obstruction is left in the roadway after dark, it shall be marked with approved lights, flares or similar devices.

(3) When work is to be performed in a manhole or unvented vault:

(i) No entry shall be permitted unless forced ventilation is provided or the atmosphere is found to be safe by testing for oxygen deficiency and the presence of explosive or potentially hazardous gases or fumes.

(ii) When unsafe conditions are detected, by testing or other means, the work area shall be ventilated and otherwise made safe before entry.

(iii) Provisions shall be made for a continuous supply of air as provided for in WAC 296-62-110.

(iv) When forced ventilation is not used a method of monitoring said manhole or vault so as to prevent the occurrence of oxygen deficiency due to work being performed in said manhole or vault, and to detect the presence of any explosive gases or fumes which may occur while the employees are working in said manhole or vault.

(4) When open flames are used or smoking is permitted in manholes, adequate mechanical forced air ventilation shall be used.

(5) Before using open flames in a manhole or excavation in an area where combustible gases or liquids may be present, such as near a gasoline service station, the atmosphere of the manhole or excavation shall be tested and found safe or cleared of the combustible gases or liquids prior to the entry.

(6) When work is to be performed in manholes containing any wires or appliances carrying electrical current, they shall be in a sanitary condition.

(7) A watchman shall be kept at the surface when there is any hazard to the employees in the manhole and he should not leave the manhole unwatched until such time as all employees are out and the cover has been replaced.

(8) Care shall be taken to prevent the possibility of vehicles or pedestrians coming in contact with the wires and equipment.

(9) Trenching and excavating.

(a) During excavation or trenching, in order to prevent exposure of employees to the hazards created by damage to dangerous underground facilities, efforts shall be made to determine the location of such facilities and work conducted in a manner designed to avoid damage.

(10) No work shall be permitted to be done in any manhole or subway on any energized wire, cable or appliance carrying more than 300 volts of electricity by less than two competent or qualified persons who shall at all times, while performing such work, be in the same manhole or subway in which work is being done. This rule shall not apply to work on telephone, telegraph or signal wires or cables.

(11) Trenching and excavation operations shall comply with the provisions of WAC 296-155-650 and 296-155-660.

(12)(a) Cables in manholes shall be accessible to employees and clear working space shall be maintained at all times.

(b) Where cables are not permanently identified by tags or otherwise, diagrams and information establishing positive identification and position of the cables shall be provided and supplied to the employees.

(c) Where multiple cables exist in an excavation, cables other than the one being worked on shall be physically protected when necessary.

(d) When multiple cables exist in an excavation, the cables to be worked on shall be identified by approved testing unless its identification is obvious by reason of the distinctive appearance.

(e) Before cutting into a high voltage cable or opening a high voltage splice, the cable shall be de-energized then clearance obtained, tested and then grounded in an approved manner. The cable to be worked on shall be identified by tags or equivalent means.

(f) When working on buried cables or cables in manholes, the metallic sheath continuity shall be maintained by bonding across the opening or by equivalent means.

(13) Insulated platforms or other protective devices shall be provided when work is to be done on energized wires or equipment in manholes.

(14) Tools and materials shall not be left on the ground around or near the manhole opening where they might be pushed or otherwise fall into the hole.

(15) Furnaces shall always be placed in a secure, level position on the downhill side of the manhole to avoid spillage of hot metals or compounds into the manhole.

(16) Materials shall not be thrown into or out of manholes but shall be placed in the proper receptable and hoisted in and out by means of a rope.

(17) Pulling underground cable. When pulling cable(s) all employees shall be made aware of the hazard of being caught in the sheaves, lashings or winch gears. All employees shall stand clear of the pulling line when the pull is begun or when the line is under tension. This rule applies to all work performed by means of a winch.

(18) Fishing conduit or ducts. When fishing conduit or ducts, it shall first be determined that the fish tape or wires will not contact any energized line or equipment.

(19) WAC 296-45-65023 on clearances and WAC 296-45-65025 on grounding shall be complied with.

[Order 76-38, § 296-45-65037, filed 12/30/76.]

WAC 296-45-65038 Underground residential distribution (URD). (1) General.

(a) Each employee shall be knowledgeable of the equipment provided for their use and shall at all times use this equipment only for the purpose intended.

(b) U.R.D. cables which are properly insulated for the voltages to which they are energized shall be considered as an effective barrier to protect the employees and table one need not apply.

(i) Workers will take adequate precautions to avoid physical contact with energized U.R.D. cable by using approved procedures and/or protective devices.

(ii) When handling energized U.R.D. primary cables, the work shall be done with approved tools and/or procedures by two qualified employees.

(Exception: Switching is exempt from this rule.)

(iii) When energized terminators or load-break elbows are handled by a hot stick, there shall be two qualified employees at the scene.

(c) When energized pad-mounted transformers or similar equipment are to be left unlocked and open, they shall be attended by a qualified employee.

(d) Approved tools and procedures shall be used to remove any debris, vines, weeds, etc., from an underground system.

(e) A primary and secondary system neutral on any energized circuit shall not be opened under any circumstances except for testing.

(f) Primary and secondary neutrals shall be firmly connected and grounded before the circuit or equipment is energized.

(g) Where different phases are in the same vault, enclosures, or parked in some manner that they could be looped, these phases shall be marked or identified.

(h) Bayonet fuses:

(i) Bayonet fuses shall not be closed into suspected faults or overloads.

(ii) Submersible U.G. transformer installations will require other methods of energizing or deenergizing and bayonet fuses shall not be used for this purpose.

(iii) Bayonet fuses shall only be operated after pad-mount transformers have been properly vented.

(iv) Bayonet fuses shall only be operated in accordance with manufacturing design and rating capabilities.

(2) Opening and guarding holes. Whenever a cover is to be removed from a manhole or underground vault, or making excavations in places accessible to vehicular or pedestrian traffic, the following precautions shall be taken:

(a) Before removal or excavating, protective barriers or approved guards and warning signs shall be erected.

(b) After dark, approved lights, reflectors, or similar devices shall be used.

(c) Where permissible and practical, the truck shall also be placed to guard the work area.

(d) A blow torch or other open flame shall never be used to melt ice around a manhole or underground vault cover.

(e) Care shall be taken to prevent the possibility of vehicles coming in contact with the wires and equipment.

(3) Entering underground structures. Before entry into any manhole or underground vault, the following precautions shall be taken:

(a) Observe subsection (2), opening and guarding holes.

(b) Prior to entering an unvented underground vault or manhole, an inspection shall be made to determine if any hazardous conditions exist. Appropriate safeguards shall be applied as required prior to the performance of any work.

(c) No entry shall be permitted unless forced ventilation is provided or the atmosphere is found safe by testing for oxygen deficiency and for the presence of explosive gases or fumes.

(d) Where unsafe conditions are detected, by testing or other means, the work area shall be ventilated and/or otherwise made safe before entry.

(e) Provisions shall be made for a continuous supply of air as provided in WAC 296-62-110 through 296-62-11013.

(f) When forced ventilation is not used, a method of monitoring for oxygen deficiency and to detect the presence of any explosive gases or fumes shall be used.

(g) In any emergency when it becomes necessary for an employee to enter an underground vault where oxygen deficiency, toxic or explosive gases are present, the employee shall use approved respiratory equipment, and a safety belt to which there is attached a fire retardant life line, attended by a qualified person stationed at the underground vault opening.

(h) A watchman shall be kept at the surface when there is any hazard to the employees in the manhole and he should not leave the manhole unwatched until such time as all employees are out and the cover has been replaced.

(i) Except in emergency conditions, a ladder shall always be used when entering or leaving an underground vault.

(4) Working in manholes and underground vaults.

(a) No work shall be permitted to be done in any manhole or subway on any energized wire, cable, or appliance carrying more than 300 volts of electricity by less than two qualified persons who shall at all times, while performing such work, be in the same manhole or subway in which work is being done. This rule shall not apply to work on telephone, telegraph, or signal wires or cables.

(b) Cable in manholes or underground vaults shall be accessible to employees and a clear working space (see items (1)(b)(i) and (ii) of this section) shall be maintained at all times; and/or approved protective guards, barriers, etc. when installed and maintained in compliance with the rules of the department of labor and industries shall be considered as providing adequate working clearance for cables over 5 k.v.

If a manhole and/or underground vault is determined to be unsafe by the man in charge, no work shall be done in the manhole and/or vault until the unsafe condition is corrected or deenergized.

(c) No work shall be performed on cables or equipment unless they have been properly identified by an approved method.

(d) Tools and materials shall not be thrown into or out of manholes or underground vaults, but shall be placed in proper receptacles and hoisted in and out by means of an approved method.

(5) Working on cables.

(a) Before any work is to be performed on underground cables and apparatus carrying high voltage, they shall be deenergized with the following exceptions:

(i) Replacing fuses, operating switches, closing or opening load-break elbows, when approved protective devices are used.

(ii) Work in the high-voltage compartment of pad-mounted transformers and similar equipment installed above ground, provided the work is done by approved methods.

(b) Where multiple cables exist in an excavation or manhole, cables other than the one being worked on shall be protected.

(c) Only one energized conductor shall be worked on at any one time, and protective means shall be used to insulate or isolate it from all others.

(d) Any cables to be worked on shall be identified by approved testing unless its identification is obvious by reason of the distinctive appearance, such as, tags, color, or other approved methods.

(e) Where work is to be performed on deenergized cables or equipment, the employee directly in charge of the work shall be responsible for determining that the conductors or equipment is deenergized.

(f) After conductors or equipment are cleared for work and the proper clearances have been obtained (WAC 296-45-65023) tests shall be made to determine that the conductors or equipment are deenergized.

(g) When working on underground cables, the metallic sheath continuity shall be maintained by bonding across the opening or by equivalent means.

(h) When work is to be performed in manholes containing any wires or appliances carrying electrical current, they shall be in a sanitary condition.

(i) Insulated platforms or other protective devices shall be provided when work is to be done on energized wires or equipment in manholes.

(6) Grounding. A capacitance charge can remain in the high voltage cables after it has been disconnected from the circuit and a static-type arc can occur when grounds are applied to such cables.

(a) All high voltage cables and equipment that have been energized or could become energized shall be considered as energized until such cables have been grounded.

(b) Grounding shall be done at a point as near to the work locations as possible, except where their installations or use increases the working hazard.

(c) Grounds may be removed for test purposes.

(d) When work is to be done on cables or equipment of a high-voltage underground system, precautions to prevent back-feed shall be taken. This shall include either isolating or grounding of the secondary conductors.

(e) After testing the cable dead, approved grounding devices shall be used. They shall be first connected to a ground before being brought into contact with any deenergized conductors to be grounded. When removed they shall be removed from all circuit conductors before being disconnected from ground.

(f) After grounding the cable, if the workman is to work on cable between terminations, he must first spike the cable or use other approved methods of testing. If the cable is to be cut, it shall be cut only with approved hot cutters.

(7) Trenching and excavating.

(a) During excavation or trenching, in order to prevent exposure of employees to the hazards created by damage to underground facilities, the man in charge shall make every effort to determine the location of such facilities and conduct the work in a manner designed to avoid damage.

(b) Trenching and excavating operations shall comply with the provisions of WAC 296-155-650 through 296-155-665.

(c) All employees engaged in trenching and excavation operations shall have access at the work site to codes, and/or standards, applicable to such work or shall have been trained in the application of trenching and excavation standards.

(8) Pulling cables. When fishing conduits or ducts, it shall first be determined that the fish tape or wires will not contact any energized lines or equipment.

(9) Heating materials. Furnaces shall always be placed in a secure level position on the downhill side of the manhole to avoid spillage of hot metals or compounds in the manhole and/or underground vault.

(10) Definitions.

(a) Load-break elbow - a connector designed to close and interrupt current on energized circuits within the design current and voltage rating.

(b) Dead-break elbow - a connector designed to be separated and engaged on deenergized circuits only.

(c) Underground network distribution system - an underground electrical installation fed from multiple primary sources directly associated with area-wide secondary network connected into a common grid.

(d) Underground residential distribution system (URD) - an electrical installation normally fed from a single primary source which may feed one or more transformers with secondaries not connected to a common grid.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-45-65038, filed 11/30/83; 83-15-017 (Order 83-19), § 296-45-65038, filed 7/13/83, effective 9/12/83.]

WAC 296-45-65039 Trolley maintenance, jumpering or bypassing. (1) Energized trolley wire shall be jumpered when it is to be opened or cut.

(2) Reaching over trolley wire(s) or system(s). Linemen shall not reach over trolley wire(s) unless properly protected by line hose or rubber blanket.

(3) Reaching across sectional insulators. Linemen shall not reach across section insulator(s), insulated spacer(s) or insulated approach.

(4) Polarity on either side of sectionalizing breakers. Since the polarity on both sides of a sectionalizing insulator may be different, it is required that prior to performance of work, tests be performed with approved testing equipment to determine whether or not the polarity is the same or different on one side of the sectional insulator as compared with the other.

(5) Working on hangers. More than one truck crew shall not work on hangers attached to the same span at the same time, without rubber protection.

(6) Workers on hangers of opposite polarity. Trolley hangers and ears of opposite polarity shall not be worked on at the same time when trolley wire is energized.

(7) Checking electric switches. When electric switches are checked for operation, making it necessary to short circuit the contactor to each trolley wire, tools with insulated handles shall be used.

(8) Short circuit due to use of noninsulated or conductive long handled tools. When a hazard of short circuit exists, due to use of noninsulated or conductive long handled tools, approved protective rubber equipment shall be used as provided in this chapter.

(9) Trolley feeders. When work is to be performed on street railway trolley feeders where it is necessary for workers to work from metal or other grounded poles or fixtures or on poles or fixtures on which grounds are maintained, the feeders shall be deenergized unless the poles or fixtures are insulated before the work is started with approved protective devices in such manner that employees cannot become grounded while working on the feeders, and employees shall wear approved rubber gloves.

[Order 76-38, § 296-45-65039, filed 12/30/76.]

WAC 296-45-65041 Aerial manlift equipment. This section applies to aerial manlift equipment as defined in WAC 296-45-65005.

(1) A daily visual inspection and operating tests shall be made in accordance with the manufacturer's recommendation by the assigned operator.

(2) Aerial manlift equipment shall be of the type designed and maintained to meet the following safety factors:

(a) Stability test. All such equipment shall meet or exceed a safety factor of one and one–half to one in all working positions, based upon the posted working load.

(b) Structural and mechanical tests. All such equipment shall meet or exceed a safety factor of 2 to 1 in all working positions, based upon the manufacturer's maximum rated capacity.

(i) The division of industrial safety and health will accept, in lieu of subdivision (b) of this section, the safety factor test data submitted by the manufacturer by a competent testing laboratory, or by a registered engineering firm. When and if there exists a reasonable doubt as to whether or not the equipment will meet the data required for stability in structural and mechanical testing, the division may require that such testing be performed on such equipment before it can be used. If the division in writing requires that the employer test its equipment or have such equipment tested, the employer will have a reasonable time within which to secure such information as is required by this rule.

(3) Employee shall not move any such equipment in the direction of an obstructed view unless the following requirements have been met. (An obstructed view exists even though the operator is able to see to the rear by reason of a system of mirrors or a mirror.)

(i) Vehicle can be backed up only when observer signals that it is safe to do so or the driver makes a walk–around inspection prior to backing up, or

(ii) The vehicle has a reverse signal alarm audible above the surrounding noise level.

(4) Hydraulic fluids.

(a) All hydraulic fluids used for the insulated section of derrick trucks, aerial lifts, and hydraulic tools which are used on or around energized lines or equipment shall be of the insulating type.

(5) Mechanical adjustment or repairs shall not be attempted or performed in the field except by a person qualified to perform such work.

(6) Malfunction or needed repairs of manlift equipment shall be reported to the employee responsible for such repairs as soon as is reasonably possible. Use of equipment which is known to be in need of repairs or is malfunctioning is prohibited when such deficiency creates an unsafe operating condition.

(7) No employee shall ride in the basket while traveling to or from jobsites.

(8) When any aerial manlift equipment is parked for operation at the jobsite, the brakes shall be set. Wheel chocks shall be used to prevent accidental movement while parked on an incline. If the aerial manlift equipment has outriggers, the outriggers shall be implanted on firm footing and all manufacturer's specifications shall be complied with.

(9) Safety check valves shall be installed in the outrigger hydraulic system which will automatically lock the outrigger in position in case of failure of the hydraulic system except when outriggers are equipped with mechanically self–locking device.

(10) The truck shall not be moved until the boom or ladder is cradled and/or fastened down, the outrigger retracted, and the power take–off disengaged, except for a short move when the truck can be moved with care and under the direction of the employee in the elevated position.

(11) Employees shall not sit or stand on the basket edge, stand on materials placed in or across the basket, or work from a ladder set inside the basket.

(12) The basket shall not be rested on a fixed object(s) so that the weight of the boom is either totally or partially supported by the basket.

(13) Neither the basket, supporting boom or ladder on aerial equipment shall come within the prohibited distance of energized high voltage conductors or equipment as set forth in Table 1 unless protective equipment is used. Special approved insulated tools, insulated fittings and insulated masts need not comply with this section.

(14) When the basket is being used in such a manner that it may contact energized high voltage lines or equipment, the vehicle shall be considered energized at line potential and the following safe practices shall be observed unless such equipment is grounded:

(a) Approved protective devices shall be used.

(b) Before physically contacting, entering or leaving the vehicle, all employees shall make sure that the boom and basket is stationary and not in contact with energized high voltage lines or equipment.

(15) While working in aerial equipment, employees shall wear an approved safety belt attached to the boom or basket, in a secure manner.

(16) No component of aerial devices shall be operated from the ground without permission from the employee in the basket except in case of emergency.

(17) Truck driver shall remain at tower controls while workers are working on towers except when the aerial manlift equipment has been properly chocked to prevent uncontrolled movement. Tower trucks shall be equipped with a reliable signaling device between the employees working on the tower and the truck driver.

(18) Working on truck towers. Employees shall not stand on tower gates or railings. Work shall not be done from plank(s) placed on tower railings.

(19) Tower truck railings. Towers shall have standard railings and toeboards around the tower and all railings shall be constructed of wood, fiberglass or other nonmetallic material. All railings shall be a vertical height of not less than 36 inches or more than 42 inches from the floor of the platform to the upper surface of the top rail. Intermediate railings shall be midway between the floor and the underside of the top rail. Tower gates shall be so constructed as to prevent accidental opening.

(20) Tower truck decks shall be kept clear of tools, wire and other materials and tools shall be kept in proper storage area when not in use.

(21) Linemen shall not wear climbers or spurs while working on a tower truck.

(22) Employees operating controls of aerial equipment shall not stand on the ground or on separate grounded surface unless wearing rubber gloves or standing on insulated board or mat, where equipment is exposed to or operated in the near vicinity of high voltage conductors.

(23) Operating levers or controls shall be kept clear of tools, materials or obstructions.

(24) Load limits as recommended by the manufacturer of aerial manlift equipment shall not be exceeded. Shock loading of the equipment is prohibited.

(25) Employees shall not climb into or out of the basket or platform while it is elevated or change from one basket to another on dual basket equipment, except in case of emergency or when the employees involved agree that this is the safest way to perform the work. This exception shall not be used to circumvent safety rules.

(26) Employees shall not belt to adjacent poles, structures, or equipment while performing work from aerial devices.

(27) Whenever it is necessary to work beyond the guarded traffic work area, extreme care shall be exercised and all precautions taken to insure the safety of the operation and the employees.

(28) Power tools not in use shall be disconnected from external power sources.

(29) Electrical, hydraulic or air tools shall have safety switches or devices to prevent accidental operation and, in addition, a quick means of disconnecting on electrically operated equipment shall be within easy reach of the operator.

(30) Existing safety rules governing the use of hot line tools, rubber and other protective equipment and safe work practices while performing work from poles or structures shall also apply to work done from aerial manlift equipment.

(31) The basket shall be kept clean and all tools not in use shall be secured or removed.

(32) Approved warning light shall be operating when the boom leaves the cradle. This light shall be visible to approaching traffic when the boom is in position over any traveled area.

(33) A braking system, independent of the drive–line braking system, shall be installed on all aerial manlift equipment where, from the engineering standpoint, it is feasible.

(34) Safety check valves shall be installed in the hydraulic system of aerial manlift equipment to automatically lock the boom or ladder in position in case of failure to any part of the hydraulic pressure system.

(35) All aerial manlift equipment shall have both upper and lower controls (except ladder trucks need not have upper controls). The upper controls shall not be capable of rendering the lower controls inoperative. The lower controls should be located at or near the base of the aerial structure.

If the lower controls are used, the operator shall have a view of the elevated employee(s) or there shall be communication between the operator and the employee in the elevated aerial structure: *Provided*, That no employee shall be raised, lowered, or moved into or from the elevated position in any aerial manlift equipment unless there is another employee, not in the elevated aerial structure, available at the site to operate the lower controls, except as follows:

(a) Where there is a fixed method permanently attached to or part of the equipment which will permit an employee to descend from the elevated position without lowering the elevated structure, or

(b) Where there is a system which will provide operation from the elevated position in the event of failure or malfunction of the primary system.

This section shall not be interpreted as an exception to any other rule in this chapter.

(36) Controls in aerial manlift equipment shall be protected from accidental operation. Controls of the outriggers shall also be protected from accidental operation. Such protection may be by guarding or equivalent means.

(37) The manufacturer's recommended maximum load limit shall be posted at a conspicuous place near each set of controls and shall be kept in a legible condition.

(38) Side member guys on aerial ladders shall be insulated.

(39) The manufacturer's operator's instructional manual shall be kept on the vehicle.

(40) Operating instructions, proper sequence and maintenance procedures prescribed by the manufacturer for operation of the equipment shall be followed.

[Order 76–38, § 296–45–65041, filed 12/30/76.]

WAC 296–45–65043 All motor vehicle and trailer operations. When motor vehicles and trailers are operated on public right–of–way, highways or similar areas, the equipment shall be operated and maintained in conformance with the motor vehicle code of the state of Washington, chapters 46.04 through 46.61 RCW.

(1) Whenever and wherever such motor vehicle is operated, such equipment shall have a safe functioning brake and an emergency brake. In addition, all motor vehicles and trailers shall have such equipment as is necessary for the safe operation of the vehicle(s).

(a) When traveling, employees must ride inside the vehicle and shall not ride on the sides or on the top, nor shall employees ascend or descend a motor vehicle when such vehicle is in motion.

(b) Employees shall not ride on trailers except in cases where the trailer requires an employee to steer or brake the trailer.

(c) A truck shall not be moved from place to place with the ladder erect other than when positioning the truck at a given location. This rule does not apply to approved tower or fixed ladder trucks.

(d) Warning signs, flares and other protective devices shall be used which shall conform with the requirements for road construction or maintenance as set forth in chapter 46.37 RCW.

(2) Vehicles shall be positioned as far off the driving lanes as possible, while performing emergency operations or repairs. The 4–way flashers and rotation amber lights shall be actuated. The rotating amber lights shall be visible at 360 degrees, in accordance with chapter 204–38 WAC. Safety cones shall be installed in front of and behind the vehicle. If the operation is for more than a short duration, they shall comply with traffic control procedures.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82–08–026 (Order 82–10), § 296–45–65043, filed 3/30/82; Order 76–38, § 296–45–65043, filed 12/30/76.]

WAC 296-45-65045 Material handling. (1) Prior to unloading steel, poles, crossarms and similar materials, the load shall be thoroughly examined to determine if the load has shifted, binders or stakes have broken or the load is otherwise hazardous to employees.

(a) The hoist rope shall not be wrapped around the load. This provision shall not apply to electric construction crews when setting or removing poles.

(2) Pole handling.

(a) During pole hauling operations, all loads shall be secured to prevent displacement, and a red flag shall be displayed at the trailing end of the longest pole.

(b) While loading and unloading materials, roadways shall not be blocked unless approved traffic control is used.

(c) When hauling poles during darkness, illuminated warning devices shall be attached to the trailing end of the longest pole in accordance with the state of Washington motor vehicle code.

(3) Tag lines. When necessary to control loads, tag lines or other approved devices shall be used.

(4) Oil filled equipment. During construction or repair of oil filled equipment, the oil may be stored in temporary containers other than those required by WAC 296-155-270, such as pillow tanks.

(5) Storage of tools and materials. All tools and materials shall be stored in a safe and orderly manner in yards for equipment and other areas.

[Order 76-38, § 296-45-65045, filed 12/30/76.]

WAC 296-45-65047 Specification for linemen's belts and similar equipment. (1) All hardware for linemen's body belts, safety straps and lanyards shall be drop forged or pressed steel and have a corrosive resistive finish tested to the American Society for Testing and Materials B117 as published in 1964 (50 hour test). Surfaces shall be smooth and free from sharp edges.

(a) All buckles shall be those guaranteed by the manufacturer as having at least a 2,000-pound tensile strength with a maximum permanent deformation no greater than one sixty-fourth inch.

(b) All "D" rings shall be those guaranteed by the manufacturer as having at least a 5,000-pound tensile strength without cracking or breaking.

(c) All snap hooks shall be those guaranteed by the manufacturer as having at least a 5,000-pound tensile strength without distortion sufficient to release the keeper.

(d) All fabric used for safety straps shall be guaranteed by the manufacturer as being capable of withstanding either AC or DC dielectric test of not less than 25,000 volts per foot "dry" for 3 minutes without visible deterioration.

(e) All fabric and leather used shall be that which has been represented by the manufacturer as having been tested for leakage current of 1 milliampere with a potential 3,000 volts when applied to the electrodes positioned 12 inches apart.

(f) The cushion part of the body belt may be either leather or other material provided that it;

(i) Has no exposed rivets on the inside;

(ii) Is at least 3 inches in width;

(iii) Is at least five thirty-seconds inch thick, if made of leather; or have equivalent strength if made of other material.

(iv) Has pocket tabs that extend at least 1-1/2 inches down and three inches back of the inside of circle of each "D" ring for riveting on plier or tool pockets. On shifting "D" belts, this measurement for pocket tabs shall be taken when the "D" ring section is centered.

(v) A maximum of four tool loops shall be so situated on the body belt that four inches of the body belt in the center of the back, measuring from "D" ring to "D" ring, shall be free of tool loops and any other attachments.

(vi) All stitching shall be of minimum 42-pound weight nylon or equivalent thread and shall be lock stitched. Stitching parallel to an edge shall not be less than three-sixteenths inch from edge of narrowest member caught by the thread. The use of cross-stitching on leather is prohibited. Approved copper, steel or equivalent liners shall be used around the bar of "D" rings to reduce the wear.

(vii) The keeper of snap hooks shall have a spring tension that will not allow the keeper to begin to open with a weight of 2-1/2 pounds or less, but the keeper of snap hooks shall begin to open with a weight of four pounds, when the weight is supported on the keeper against the end of the nose.

(2) Testing linemen's safety straps, body belts and lanyards shall be in accordance with the following procedure:

(a) Attach one end of the safety strap or lanyard to a rigid support, the other end shall be attached to a 250-pound canvas bag of sand;

(b) Allow the 250-pound canvas bag of sand to free fall 4 feet for (safety strap test) and 6 feet for (lanyard test), in each case stopping the fall of the 250-pound bag;

(c) Failure of the strap or lanyard shall be indicated by any breakage, or slippage sufficient to permit the bag to fall free of the strap or lanyard. The entire "body belt assembly" shall be tested using one "D" ring. A safety strap or lanyard shall be used that is capable of passing the "impact loading test" and attached as required in item (a) of this subdivision. The body belt shall be secured to the 250-pound bag of sand at a point to simulate the waist of a man and allowed to drop as stated in item (b) of this subdivision. Failure of the body belt shall be indicated by any breakage, or slippage sufficient to permit the bag to fall free of the body belt.

(d) Life lines and lanyards shall comply with the provisions of WAC 296-155-225 (2), (3), (5) and (6).

[Order 76-38, § 296-45-65047, filed 12/30/76.]

WAC 296-45-660 Tree trimming. The purpose of this chapter is to make the workplace free from hazard. All sections of this chapter which include WAC 296-45-660 in the section number will apply.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-660, filed 6/17/81.]

WAC 296-45-66001 Electrical hazards. (1) This section applies to tree trimming by contractors under WAC 296-17-506 (Class 1-6), tree trimming near energized power lines on utility property, governmental and privately owned systems.

(2) Definitions applicable to this section.

(a) "Aerial manlift equipment" - all types of equipment such as extended towers, boom-mounted cages or baskets and truck-mounted ladders. This equipment is primarily designed to place personnel and equipment aloft for working.

(b) "Qualified line-clearing tree trimmer" - a tree worker who through related training and on-the-job experience is familiar with the special techniques and hazards involved in line clearing.

(c) "Qualified line-clearing tree-trimmer trainee" - any worker regularly assigned to a line-clearing tree-trimming crew and undergoing related training and on-the-job training who, in the course of such training, has demonstrated his ability to perform his duties safely at his level of training.

(d) "Tree trimming groundman" - a member of crew working on the ground under the direction of foreman or tree trimmer.

(3) First aid. In addition to complying with the first aid provisions as found in WAC 296-24-060 through 296-24-073, all employees whose duties require them to work near energized wires, or climb trees shall take an approved course in controlling bleeding and cardiopulmonary resuscitation, and be capable of aerial or tree rescue and remain proficient in its application.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66001, filed 6/17/81.]

WAC 296-45-66003 Tools and protective equipment. All protective hats shall be in accordance with the specifications of ANSI Z89.2-1971 Edition Industrial Protective Helmets for Electrical Workers, Class B, and shall be worn at the jobsite by employees who are exposed to overhead or electrical hazards.

(1) Defective ropes shall not be used and shall be replaced.

(2) Body belts with straps, saddles or lanyards shall be worn by employees working at an elevated position. Body belts, saddles and straps shall be inspected each day for defects before use. Defective body belts, saddles and straps shall not be used.

(3) Body belts, safety straps and saddles shall not be stored with any sharp-edged tools or near sharp objects. When a body belt, saddle, safety strap and climbers are kept in the same container, they shall be stored in such a manner as to avoid cutting or puncturing the material of the body belt, saddle or safety strap with the gaffs or climbers.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66003, filed 6/17/81.]

WAC 296-45-66005 Insulated tools used for tree trimming. (1) Only insulated tools having manufacturer's certification of withstanding the following minimum tests shall be used:

(a) 100,000 volts per foot of length for 5 minutes when the tool is made of fiberglass; or

(b) 75,000 volts per foot of length for 3 minutes when the tool is made of wood; or

(c) Other tests which equal or exceed (a) and (b) of this subsection.

(2) All insulated tools shall be visually inspected each day before use. All insulated tools shall be wiped clean before being used.

(3) Defective insulated tools shall not be used and shall be marked as defective and turned in for repair or replacement.

(4) Hand tools.

(a) All hydraulic tools which are used near energized lines or equipment shall use nonconductive hoses having approved strength for the normal operating pressures. The provisions of WAC 296-155-360 (4)(a) and (b) are mandatory.

(b) All pneumatic tools which are used near energized lines or equipment shall:

(i) Have nonconducting hoses having approved strength for the normal operating pressures, and

(ii) Have an accumulator on the compressor to collect moisture.

(5) All tools shall be kept in good working condition and shall be properly stored. Defective tools shall be taken out of service.

(6) Wearing apparel. Goggles, hearing protection, respirators, and other such personal protective devices shall not be interchanged among employees unless they have been sanitized.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66005, filed 6/17/81.]

WAC 296-45-66007 Aerial manlift equipment. This section applies to aerial manlift equipment as defined in WAC 296-45-65005.

(1) A daily visual inspection and operating tests shall be made in accordance with the manufacturer's recommendation by the assigned operator.

(2) Aerial manlift equipment shall be of the type designed and maintained to meet the following safety factors:

(a) Stability test. All such equipment shall meet or exceed a safety factor of one and one-half to one in all working positions, based upon the posted working load.

(b) Structural and mechanical tests. All such equipment shall meet or exceed a safety factor of 2 to 1 in all working positions, based upon the manufacturer's maximum rated capacity.

(c) The division of industrial safety and health will accept, in lieu of subdivision (b) of this section, the safety factor test data submitted by the manufacturer by a competent testing laboratory, or by a registered engineering firm. When and if there exists a reasonable doubt as to whether or not the equipment will meet the data required for stability in structural and mechanical testing, the division may require that such testing be performed on such equipment before it can be used. If the division in writing requires that the employer test its equipment or have such equipment tested, the employer

will have a reasonable time within which to secure such information as is required by this rule.

(3) Employee shall not move any such equipment in the direction of an obstructed view unless the following requirements have been met. (An obstructed view exists even though the operator is able to see to the rear by reason of a system of mirrors or a mirror.)

(a) Vehicle can be backed up only when observer signals that it is safe to do so or the driver makes a walk-around inspection prior to backing up, or

(b) The vehicle has a reverse signal alarm audible above the surrounding noise level.

(4) Hydraulic fluids. All hydraulic fluids used for the insulated section of derrick trucks, aerial lifts, and hydraulic tools which are used around energized lines or equipment shall be of the insulating type.

(5) Mechanical adjustment or repairs shall not be attempted or performed in the field except by a person qualified to perform such work.

(6) Malfunction or needed repairs of manlift equipment shall be reported to the employee responsible for such repairs as soon as is reasonably possible. Use of equipment which is known to be in need of repairs or is malfunctioning is prohibited when such deficiency creates an unsafe operating condition.

(7) No employee shall ride in the basket while traveling to or from jobsites.

(8) When any aerial manlift equipment is parked for operation at the jobsite, the brakes shall be set. Wheel chocks shall be used to prevent accidental movement while parked on an incline. If the aerial manlift equipment has outriggers, the outriggers shall be used in accordance with manufacturer's specifications.

(9) Safety check valves shall be installed in the outrigger hydraulic system which will automatically lock the outrigger in position in case of failure of the hydraulic system except when outriggers are equipped with mechanically self-locking device.

(10) The truck shall not be moved until the boom or ladder is cradled and/or fastened down, the outrigger retracted, and the power take-off disengaged, except for a short move when the truck can be moved with care and under the direction of the employee in the elevated position.

(11) Employees shall not sit or stand on the basket edge, stand on materials placed in or across the basket, or work from a ladder set inside the basket.

(12) The basket shall not be rested on a fixed object(s) so that the weight of the boom is either totally or partially supported by the basket.

(13) Neither the basket, supporting boom or ladder on aerial equipment shall come within the prohibited distance of energized high voltage conductors or equipment as set forth in Table 1 unless protective equipment is installed by a qualified person.

(14) While working in aerial equipment employees shall wear an approved safety belt attached to the boom or basket, in a secure manner.

(15) No component of aerial devices shall be operated from the ground without permission from the employee in the basket except in case of emergency.

(16) Truck driver shall remain at tower controls while workers are working on towers except when the aerial manlift equipment has been properly chocked to prevent uncontrolled movement. Tower trucks shall be equipped with a reliable signaling device between the employees working on the tower and the truck driver.

(17) Operating levers or controls shall be kept clear of tools, materials or obstructions.

(18) Load limits as recommended by the manufacturer of aerial manlift equipment shall not be exceeded. Shock loading of the equipment is prohibited.

(19) A tree trimmer may climb out of a basket into a tree or from a tree back into the basket so long as he is properly tied into the tree during the entire maneuver.

(20) Employees shall not belt to trees, structures, or equipment while performing work from aerial devices.

(21) Whenever it is necessary to work beyond the guarded traffic work area, extreme care shall be exercised and all precautions taken to ensure the safety of the operation and the employees.

(22) Power tools not in use shall be disconnected from external power sources.

(23) Electrical, hydraulic or air tools shall have safety switches or devices to prevent accidental operation and, in addition, a quick means of disconnecting on electrically operated equipment shall be within easy reach of the operator.

(24) The basket shall be kept clean and all tools not in use shall be secured or removed.

(25) Approved warning light shall be operating when the boom leaves the cradle. This light shall be visible to approaching traffic when the boom is in position over any traveled area.

(26) Safety check valves shall be installed in the hydraulic system of aerial manlift equipment to automatically lock the boom or ladder in position in case of failure to any part of the hydraulic pressure system.

(27) All aerial manlift equipment shall have both upper and lower controls (except ladder trucks need not have upper controls). The upper controls shall not be capable of rendering the lower controls inoperative. The lower controls should be located at or near the base of the aerial structure.

If the lower controls are used, the operator shall have a view of the elevated employee(s) or there shall be communication between the operator and the employee in the elevated aerial structure: *Provided*, That no employee shall be raised, lowered, or moved into or from the elevated position in any aerial manlift equipment unless there is another employee, not in the elevated aerial structure, available at the site to operate the lower controls, except as follows:

(a) Where there is a fixed method permanently attached to or part of the equipment which will permit an employee to descend from the elevated position without lowering the elevated structure, or

(b) Where there is a system which will provide operation from the elevated position in the event of failure or malfunction of the primary system.

This section shall not be interpreted as an exception to any other rule in this chapter.

(28) Controls in aerial manlift equipment shall be protected from accidental operation. Controls of the outriggers shall also be protected from accidental operation. Such protection may be by guarding or equivalent means.

(29) The manufacturer's recommended maximum load limit shall be posted at a conspicuous place near each set of controls and shall be kept in a legible condition.

(30) The manufacturer's operator's instruction manual shall be kept on the vehicle.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 82-13-045 (Order 82-22), § 296-45-66007, filed 6/11/82. Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66007, filed 6/17/81.]

WAC 296-45-66009 All motor vehicle and trailer operations. When motor vehicles and trailers are operated on public right-of-way, highways or similar areas, the equipment shall be operated and maintained in conformance with the motor vehicle code of the state of Washington, chapters 46.04 through 46.61 RCW.

(1) Whenever and wherever such motor vehicle is operated, such equipment shall have a safe functioning brake and an emergency brake. In addition, all motor vehicles and trailers shall have such equipment as is necessary for the safe operation of the vehicle(s).

(2) When traveling, employees must ride inside the vehicle and shall not ride on the sides or on the top, nor shall employees ascend or descend a motor vehicle when such vehicle is in motion.

(3) Warning signs, flares and other protective devices shall be used which shall conform with the requirements for road construction or maintenance as set forth in chapter 46.37 RCW.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66009, filed 6/17/81.]

WAC 296-45-66011 Working in proximity to electrical hazards. (1) Contractors shall ensure that a close inspection is made by the employee and by the foreman or supervisor in charge before climbing, entering, or working around any tree, to determine whether an electrical power conductor passes through the tree, or passes within reaching distance of an employee working in the tree.

(2) Employees engaged in trimming, removing, or clearing trees from lines shall be required to consider all overhead electrical power conductors to be energized until such energized lines have been de-energized and grounded in accordance with the system policy.

(3) Only qualified line-clearing tree trimmer or tree trimming trainee familiar with the special techniques and hazards involved in line clearing, shall be permitted to perform the work if it is found that an electrical hazard exists.

(4) During all tree working operations aloft where an electrical hazard of more than 750 volts exists, there shall be a second employee or trainee qualified in line clearance tree trimming within normal voice communication.

(5) Where tree work is performed by employees qualified in line-clearing tree trimming and trainees qualified in line-clearing tree trimming, the clearances from energized conductors given in Table 1 shall apply.

TABLE I

Minimum Working Distances from Energized Conductors
For Line-Clearing Tree Trimmers and Line-Clearing Tree Trimmer Trainees

Voltage Range (Phase to Phase) (kilovolts)	Minimum Working Distance
2.1 to 15.0	2 ft. 0 in.
15.1 to 35.0	2 ft. 4 in.
35.1 to 46.0	2 ft. 6 in.
46.1 to 72.5	3 ft. 0 in.
72.6 to 121.0	3 ft. 4 in.
138.0 to 145.0	3 ft. 6 in.
161.0 to 169.0	3 ft. 8 in.
230.0 to 242.0	5 ft. 0 in.
345.0 to 362.0	7 ft. 0 in.
500.0 to 552.0	11 ft. 0 in.
700.0 to 765.0	15 ft. 0 in.

(6) Branches hanging on an energized conductor may only be removed using approved insulated tools by a qualified line-clearing tree trimmer.

[Statutory Authority: RCW 49.17.040, 49.17.050 and 49.17.240. 81-13-053 (Order 81-9), § 296-45-66011, filed 6/17/81.]

WAC 296-45-675 Rotorcraft/helicopter for power distribution and transmission line installation, construction and repair--Scope. (1) These standards which include WAC 296-45-675 shall apply to work being done on or near any rotorcraft, helicopter crane, or similar device when such device is for power distribution and transmission line construction, alteration, repair or similar work. These standards include work practices when such equipment is being or is about to be used and shall apply to the exclusion of any other standard should such other standard be in conflict with the standards contained herein.

(2) These rules shall be interpreted where necessary to achieve the protection of employees affected by the hazards particular to the helicopter operation and shall be so interpreted as not to conflict with any federal law or regulation governing the operation or maintenance of such craft.

[Order 76-38, § 296-45-675, filed 12/30/76.]

WAC 296-45-67503 Definitions. (1) "Cargo hooks." A device attached or suspended from an aircraft which is used to connect an external load to the aircraft through direct couplings or by lead lines. This unit has both mechanical and electrical locking/unlocking means.

(2) "Designated employees." Those employees selected or designated by the employer to work under or

near helicopters who have first been instructed in hooking, unhooking, guiding and securing the load, including the signalman, all of whom have been instructed in the hazards of helicopter work and who know the provisions of this section.

(3) "Downwash." A down and outward air column from the main rotor system.

(4) "Ground personnel or crew." Those employees who are physically and mentally capable, who are familiar with the hazards of helicopter use in power distribution and transmission line work, and who know these rules and the methods of operation.

(5) "Helicopter," helicopter crane," and "rotorcraft." Those aircraft whose support in the air is derived solely from the reaction of a stream of air driven downward by propellers revolving around a vertical axis, which are designed for and capable of carrying external loads. The use of the word helicopter in these rules shall also mean helicopter crane, rotorcraft, or similar device.

(6) "Hooking and unhooking." That process by which an external load is either attached to or released from the cargo hook.

(7) "Positive guide system." A system or method of installing a load into position so that the load is capable of being released from the helicopter without being otherwise secured so that the load will remain in position permanently or until otherwise secured by physical means.

(8) "Rotors." That system of blades which rotates or revolves to supply lift or direction to the rotorcraft.

(9) "Approved rubber gloves." Rubber insulating gloves used for protection of electrical workers from electric shock while working on energized conductors and equipment.

(10) "Signalman." That member of the ground crew that is designated by an employer to direct, signal and otherwise communicate with the operator of the helicopter.

(11) "Sling line." A strap, chain, rope or the like used to securely hold something being lifted, lowered, carried or otherwise suspended.

(12) "Sock line." A rope(s), cable(s) or similar line(s) which is used to pull a conductor line from a reel or to remove existing strung conductors from poles or towers.

(13) "Static charge." A stationary charge of electricity.

(14) "Tag line." A rope or similar device used to guide or control the direction or movement of a load.

[Order 76-38, § 296-45-67503, filed 12/30/76.]

WAC 296-45-67505 Briefing. (1) Before work or a job involving helicopters begins, there shall be a discussion between all affected employees which shall include the ground crew, signalman and pilot or operator of the helicopter. The discussion shall cover the particular hazards of the job, the methods of performing the work and the signals to be used. All employees shall, before the beginning of such work or job, understand in detail the hazards, the methods and the signals to be used and these regulations.

(2) Every employee before being allowed to work on or near helicopter(s) operating with or without load shall be advised and understand the hazards involved, the methods of performing the work, the signals being used and these regulations.

[Order 76-38, § 296-45-67505, filed 12/30/76.]

WAC 296-45-67507 Signals. (1) The signals between the signalman and the operator of the helicopter shall be those submitted to the Federal Aviation Agency for the particular procedure or job. In the event no signals have been submitted to the Federal Aviation Administration, a system of signaling shall be used which has been reduced to writing and which is capable of being clearly understood by all employees and others involved in the job.

(2) Should there occur a change in the hazards, method of performing the job, signals to be used, or other operating conditions during the course of any particular job, a conference shall immediately be held at which time all affected employees and others, including signalmen, groundmen, pilot(s), will be advised of such hazards or change of operation. No employee shall be permitted to work unless such employee and others fully understand the change(s) which have taken place.

[Order 76-38, § 296-45-67507, filed 12/30/76.]

WAC 296-45-67509 Slings and tag lines. (1) Loads shall be properly slung so that there will be no slippage or shifting of the load and so that the load will not accidentally be dislodged from the helicopter.

(2) Tag lines shall be of such length as not to be capable of being accidentally drawn into or otherwise entering into the rotors.

(3) Pressed sleeves, wedged eyes, or equivalent means shall be used for all suspended loads.

[Order 76-38, § 296-45-67509, filed 12/30/76.]

WAC 296-45-67511 Cargo hooks. (1) All electrically operated cargo hooks shall have the electrical activating device which is so designed and installed as to prevent inadvertent or accidental operation. Such cargo hooks shall be equipped with an emergency mechanical or manual control for releasing the load. The electrical control shall be a double button single hand control.

(2) No electrical cargo hook shall be used unless, prior to that day's operation, the releases are tested and functioning properly, both electrically and mechanically (manually).

(3) No employee shall be permitted to work under a hovering helicopter(s) unless the cargo hooks used comply with Federal Aviation Administration regulations governing such hooks.

[Order 76-38, § 296-45-67511, filed 12/30/76.]

WAC 296-45-67513 Personal protective equipment. Personal protective equipment when working on, under or in the near vicinity of helicopters:

(1) All employees shall wear eye protection of such design as to prevent the likelihood of dust or other substances from contacting the eye(s) of employees.

(2) All employees shall wear hard hats which shall be secured on the employee's head by a chinstrap.

[Order 76-38, § 296-45-67513, filed 12/30/76.]

WAC 296-45-67515 Wearing apparel. No employee shall wear clothing or apparel which is either designed to or in fact can reasonably be expected to flap or otherwise react in a similar fashion in the downwash or air disturbance of a helicopter(s). No employee shall work on, under or in the near vicinity of a helicopter while wearing such apparel or clothing which flaps or moves to the extent that it presents a hazard in that it could be caught in the moving equipment, the hoist line, or otherwise interfere with the safe performance of the work.

[Order 76-38, § 296-45-67515, filed 12/30/76.]

WAC 296-45-67517 Loose gear and objects. All loose gear, including lunch boxes, rope, cardboard, wire covers and similar items shall be removed or secured or otherwise made fast before the helicopter is started or allowed to approach such area. In the event the gear is not secured or fastened, it shall be removed and located outside the downwash at least 100 feet from the helicopter.

[Order 76-38, § 296-45-67517, filed 12/30/76.]

WAC 296-45-67519 Housekeeping. All helicopter landing, loading and unloading areas shall be maintained in a neat and orderly fashion so as to reduce the likelihood of flying materials, tripping, or other hazards attendant to the work being performed.

[Order 76-38, § 296-45-67519, filed 12/30/76.]

WAC 296-45-67521 Operator's responsibility. (1) The helicopter operator shall be responsible for the size, weight and manner in which loads are connected to the helicopter.

(a) No load shall be made if the helicopter operator believes the lift cannot safely be performed. The employer shall make certain that the operator of the helicopter is able to freely exercise his prerogative and judgment as to safe operation of the helicopter itself concerning size, weight and manner by which loads are connected.

(2) No employee shall work on, under, near or in conjunction with a helicopter whose operation does not correspond with the foregoing provisions.

[Order 76-38, § 296-45-67521, filed 12/30/76.]

WAC 296-45-67523 Hooking and unhooking loads. No employee shall perform work under hovering helicopters: *Provided*, That qualified and capable employees may function under such craft for that limited period of time necessary to guide, secure, hook or unhook the loads. When guiding, securing, hooking or unhooking the load at elevated positions, employees shall be assisted by and use a positive positioning guide system. When under hovering helicopters at any other location, the employee shall have a safe means of ingress and egress, including readily available escape route or routes in the event of an emergency. No other work or work-related activity other than the aforementioned shall be permitted under hovering helicopters. Bolting of or otherwise permanently securing the structures is prohibited under hovering helicopters except that in the event of an unforeseen contingency of an emergency nature which represents a substantial hazard to life or property, an employee may do such work as is necessary to preserve life or protect substantial property.

[Order 76-38, § 296-45-67523, filed 12/30/76.]

WAC 296-45-67525 Static charge. All loads shall be grounded with a grounding device capable of discharging either the actual or potential static charge before ground personnel either touch or come close enough to touch the suspended load, or protective rubber gloves shall be worn by all ground personnel either touching the suspended load or who are likely to touch the load.

[Order 76-38, § 296-45-67525, filed 12/30/76.]

WAC 296-45-67527 Load permitted. Weight of the external load shall not exceed the manufacturer's load limit.

(1) A helicopter shall not pull any cable, rope or similar line which is at any point attached to a fixed object other than the helicopter itself. Helicopters may pull a free-wheeling sock line so long as the end of the sock line is not tied to a reel, truck, or other fixed object. Such line cannot be tied to or otherwise secured to the roll-off reel other than by having been wrapped around such reel.

[Order 76-38, § 296-45-67527, filed 12/30/76.]

WAC 296-45-67529 Visibility. Employees shall keep clear of and outside the downwash of the helicopters except as necessary to perform a permitted activity. Where reasonably practicable, reduced vision of the operator and ground crew shall be eliminated.

[Order 76-38, § 296-45-67529, filed 12/30/76.]

WAC 296-45-67531 Signal systems. Communication shall be maintained between the air crew and ground personnel at all times. Such signal systems shall be understood by the air crew and the ground crew, including signalmen, prior to the hoisting of any load. There shall be constant radio and hand signals used. The signalman shall have the sole and exclusive function during periods of loading and unloading of signaling and maintaining communications with the pilot. The signalman shall be so dressed as to make his appearance distinguishable from other members of the ground crew by the operator of the craft. This may be by way of orange-colored gloves, vest, or other wearing apparel. In addition, the foreman and one top man shall also have an operating transmitter and receiver.

(1) Designated employees may come within 50 feet of the helicopter when the rotor blades are turning, but no closer, other than to enter the craft or to hook or unhook the load or do other essential functions. Other employee(s) shall not come closer than 100 feet of the craft when it is operating.

[Order 76-38, § 296-45-67531, filed 12/30/76.]

WAC 296-45-67533 Approaching the helicopter. Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of pilot or operator and remain in a crouched position if within 50 feet of the helicopter. No employee shall approach the rear of the helicopter unless directly authorized and directed by the operator of such craft to be there at that time. All employees when operating or working within 50 feet of the helicopter with blades turning are subject to the direction of the helicopter operator. No employee shall enter or leave the helicopter unless and until the place at which they enter or leave such craft is large enough for the helicopter itself to land.

[Order 76-38, § 296-45-67533, filed 12/30/76.]

WAC 296-45-67535 In helicopter. (1) While in the helicopter, safety belts will remain fastened at all times except when pilot or operator instructs otherwise or while entering or leaving the helicopter.

(2) No smoking in the helicopter unless otherwise permitted by the pilot.

(3) All rack cargo will be secured prior to and during takeoff and flight.

(4) All internal cargo will be secured or otherwise held.

(5) No gear shall be thrown toward or placed in front of the cockpit on or near plexiglass enclosure.

(6) No employee shall lean against or rub the plexiglass.

(7) No employee shall ride in or work under or near a helicopter with less than 15 minutes reserve fuel.

(8) No employee shall have sharp objects in his pocket while sitting in or on the helicopter.

(9) No employee shall touch any switch, knob, instrument, or other control or device in the cockpit unless specifically directed by the operator.

(10) No cargo shall be thrown into pans or cargo rack.

(11) No employee shall obscure or otherwise obstruct the pilot's ability to visually see the instruments or flight path during flight or operation.

(12) No employee shall attempt to slow or stop the rotorcraft blades by hand unless directed or instructed to do so and aided by the pilot.

[Order 76-38, § 296-45-67535, filed 12/30/76.]

WAC 296-45-67537 Sling and rigging. (1) The sling used for the external load shall be inspected each day before use. An employee designated as rigger, who shall be capable of properly inspecting the rigging, shall inspect the sling.

(2) No sling shall be used unless it has a minimum tensile strength of four times the load which will be carried or is being carried.

(3) No sling shall be used unless upon inspection it is determined to be in good condition and capable of the work which is to be performed.

[Order 76-38, § 296-45-67537, filed 12/30/76.]

WAC 296-45-67539 Personnel. All ground personnel shall be physically and mentally able to perform the work to which they are assigned, including being knowledgeable in these rules. There shall be a sufficient number of ground personnel so as to be able to safely guide, secure, hook and unhook the load.

[Order 76-38, § 296-45-67539, filed 12/30/76.]

WAC 296-45-67541 Fires. Open fires shall not be permitted in any area in which said fires will be affected by the downwash of the rotors, nor shall any employee smoke in an area subject to the downdraft of the rotor.

[Order 76-38, § 296-45-67541, filed 12/30/76.]

WAC 296-45-67543 General. No employee shall work under or in the near vicinity of helicopters unless the operator has a valid license for operating the craft, knows the signals to be used, has been present at the last briefing held and knows these rules. No employee shall work under or near such craft if the operator is under the influence of intoxicating beverages or prescription medications which affect his ability, nor shall any employee work under or near such craft if the operator is careless or engages in any negligent or reckless operation of the helicopter.

[Order 76-38, § 296-45-67543, filed 12/30/76.]

Chapter 296-46 WAC
SAFETY STANDARDS--INSTALLING ELECTRIC WIRES AND EQUIPMENT--ADMINISTRATIVE RULES

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-46-010, 296-46-020, 296-46-030, 296-46-040, 296-46-050, 296-46-060. [Filed 9/22/60, effective 12/1/60.] Repealed by Order 69-2, filed 2/28/69, effective 4/1/69.

296-46-115 Definitions. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-115, filed 2/27/81, effective 4/1/81.] Repealed by 83-23-053 (Order 83-32), filed 11/14/83. Statutory Authority: RCW 19.28.120 and 19.28.510.

296-46-120 Workmanship. [Order 72-7, § 296-46-120, filed 6/7/72; Order 69-2, § 296-46-120, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-165 Service ampacity. [Order 72-7, § 296-46-165, filed 6/7/72.] Repealed by Order 74-43, filed 12/19/74.

296-46-170 Clearance of service drop for single family or duplex residences. [Order 69-2, § 296-46-170, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-190 Current transformers. [Order 69-2, § 296-46-190, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-210 Service entrance cable. [Order 69-2, § 296-46-210, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-230 Service entrance. [Order 74-43, § 296-46-230, filed 12/19/74; Order 72-7, § 296-46-230, filed 6/7/72; Order 69-2, § 296-46-230, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-242 Transformer neutral grounding. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-242, filed 1/31/78.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-244 Utility conductor limitations. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-244, filed 1/31/78.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-250 Safe wiring label. [Order 69-2, § 296-46-250, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-260 Direct burial cable. [Order 75-25, § 296-46-260, filed 8/4/75; Order 72-7, § 296-46-260, filed 6/7/72; Order 69-2, § 296-46-260, filed 2/28/69, effective 4/1/69.] Repealed by Order 74-43, filed 12/19/74 and later adopted, as amended, by Order 75-25, filed 8/4/75.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-265 Conductors of different systems. [Order 74-43, § 296-265 (codified as WAC 296-46-265), filed 12/19/74.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-270 Metallic plumbing lines. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-270, filed 1/31/78; Order 69-2, § 296-46-270, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-280 Garbage disposal, waste disposal or waste compactor appliances and dishwasher circuits. [Order 72-7, § 296-46-280, filed 6/7/72; Order 69-2, § 296-46-280, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-290 Range circuit. [Order 69-2, § 296-46-290, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-300 Water heaters. [Order 75-25, § 296-46-300, filed 8/4/75; Order 74-43, § 296-46-300, filed 12/19/74; Order 69-2, § 296-46-300, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-310 Clothes dryers. [Order 69-2, § 296-46-310, filed 2/28/69, effective 4/1/69.] Repealed by Order 72-7, filed 6/7/72.

296-46-320 Electric heating. [Order 74-43, § 296-46-320, filed 12/19/74; Order 73-7, § 296-46-320, filed 5/17/73; Order 72-7, § 296-46-320, filed 6/7/72; Order 69-2, § 296-46-320, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-330 Bathroom receptacles. [Order 69-2, § 296-46-330, filed 2/28/69, effective 4/1/69.] Repealed by Order 72-7, filed 6/7/72.

296-46-335 Unfinished areas. [Statutory Authority: RCW 19.28-.060. 81-06-037 (Order 81-5), § 296-46-335, filed 2/27/81, effective 4/1/81; Order 74-43, § 296-46-335, filed 12/19/74; Order 72-7, § 296-46-335, filed 6/7/72.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-340 Recreation room. [Order 69-2, § 296-46-340, filed 2/28/69, effective 4/1/69.] Repealed by Order 74-43, filed 12/19/74.

296-46-355 Mobile home connections. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-355, filed 2/27/81, effective 4/1/81.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-380 Rockcrushers. [Order 69-2, § 296-46-380, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-390 Woodworking plants. [Statutory Authority: RCW 19-.28.060. 78-02-098 (Order 77-31), § 296-46-390, filed 1/31/78; Order 69-2, § 296-46-390, filed 2/28/69, effective 4/1/69.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-400 Mobile homes. [Order 69-2, § 296-46-400, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-401 License fee. [Order 71-17, § 296-46-401, filed 12/7/71.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-40101 Administrator fees. [Order 74-43, § 296-46-401, (codified as WAC 296-46-40101), filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-402 Fees. [Order 75-25, § 296-46-402, filed 8/4/75; Order 74-43, § 296-46-402, filed 12/19/74; Order 71-17, § 296-36-402 (codified as WAC 296-46-402), filed 12/7/71.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-410 Conductor termination. [Order 69-2, § 296-46-410, filed 2/28/69, effective 4/1/69.] Repealed by Order 72-7, filed 6/7/72.

296-46-424 Residential occupancies, ground fault circuit interrupters. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-424, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-424, filed 1/31/78; Order 75-25, § 296-46-424, filed 8/4/75.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28-.010 and 19.28.060.

296-46-425 Construction sites. [Order 74-43, § 296-46-425, filed 12/19/74.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-426 Bonding agricultural structures and equipment. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-426, filed 1/31/78; Order 74-43, § 296-46-426, filed 1/3/75.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-450 Grounded neutral conductor. [Order 69-2, § 296-46-450, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-460 Terminating immediately inside an outside building wall. [Order 75-25, § 296-46-460, filed 8/4/75; Order 72-7, § 296-46-460, filed 6/7/72; Order 69-2, § 296-46-460, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060.

296-46-492 Electrical license and administrator certificate designation. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-492, filed 1/31/78.] Repealed by 83-23-053 (Order 83-32), filed 11/14/83. Statutory Authority: RCW 19.28.120 and 19.28.510.

296-46-493 Electrical contractor license and administrator certificate fees. [Statutory Authority: RCW 19.28.060 and 19.28.210. 82-18-036 (Order 82-29), § 296-46-493, filed 8/26/82. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-493, filed 1/31/78.] Repealed by 83-23-053 (Order 83-32), filed 11/14/83. Statutory Authority: RCW 19.28.120 and 19.28.510.

296-46-500 Electrical advisory board. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-500, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-500, filed 1/31/78; Order 74-43, § 296-46-500, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-501 Board of electrical examiners. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-501, filed 2/27/81, effective 4/1/81.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-506 Responsibilities of electrical contractors administrator certificate holders—Revocation of certificates—Appeals. [Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-506, filed 2/27/81, effective 4/1/81.] Repealed by 83-23-053 (Order 83-32), filed 11/14/83. Statutory Authority: RCW 19-.28.120 and 19.28.510.

296-46-510 Definitions. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-510, filed 1/31/78; Order 74-43, § 296-46-510, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-515 Officers. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-515, filed 1/31/78; Order 74-43, § 296-46-515, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-520 Internal management. [Order 74-43, § 296-46-520, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-525 Board duties. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-525, filed 1/31/78; Order 74-43, § 296-46-525, filed 12/19/74.] Repealed by 81-06-037 (Order 81-5), filed 2/27/81, effective 4/1/81. Statutory Authority: RCW 19.28.060.

296-46-530 Hearings. [Order 74-43, § 296-46-530, filed 12/19/74.] Repealed by 83-23-053 (Order 83-32), filed 11/14/83. Statutory Authority: RCW 19.28.120 and 19.28.510.

296-46-535 Appearance and practice before advisory board. [Order 74-43, § 296-46-535, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-540 Solicitation of business unethical. [Order 74-43, § 296-46-540, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-545 Standards of ethical conduct. [Order 74-43, § 296-46-545, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-550 Appearance by former employee. [Order 74-43, § 296-46-550, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-555 Former employee as expert witness. [Order 74-43, § 296-46-555, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-560 Computation of time. [Order 74-43, § 296-46-560, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28-.010 and 19.28.060.

296-46-565 Administrative Procedure Act. [Order 74-43, § 296-46-565, filed 12/19/74.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-590 Electric heating. [Statutory Authority: RCW 19.28-.060. 78-02-098 (Order 77-31), § 296-46-590, filed 1/31/78.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-59005 Appendix A—Residential heat loss tables. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-59005, filed 1/31/78. Formerly Appendix A.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-59010 Appendix B—Outdoor design temperatures. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-59010, filed 1/31/78. Formerly Appendix B.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-900 Appendix C—Drawing E-103. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-900, filed 1/31/78; Order 75-25, Appendix C—Drawing E-103 (codified as WAC 296-46-900), filed 8/4/75; Order 72-7, Appendix C, filed 6/7/72.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

296-46-905 Appendix D—Drawing E-104. [Order 75-25, Appendix D (codified as WAC 296-46-905), filed 8/4/75; Order 72-7, Appendix D, filed 6/7/72.] Repealed by 84-15-051 (Order 84-10), filed 7/17/84. Statutory Authority: RCW 19.28.010 and 19.28.060.

Appendix A Residential heat loss tables. [Order 72-7, Appendix A—Residential heat loss tables, filed 6/7/72; Order 69-2, Appendix A—Electric heat loss calculation, filed 2/28/69, effective 4/1/69.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28.060. Later promulgation, see WAC 296-46-59005.

Appendix B Outdoor design temperatures—Charts. [Order 72-7, Appendix B—Outdoor design temperatures—Charts, filed 6/7/72.] Repealed by 78-02-098 (Order 77-31), filed 1/31/78. Statutory Authority: RCW 19.28-.060. Later promulgation, see WAC 296-46-59010.

Reviser's note: The 1978 Edition of National Electrical Code (NFPA No. 70-1978) was adopted by the department of labor and industries on January 1, 1978. [Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), filed 1/31/78.]

WAC 296-46-110 Foreword. The 1984 edition of the National Electrical Code is hereby adopted by reference as part of this chapter. Other codes, manuals, and reference works referred to in this chapter are available for inspection and review in the Seattle office of the electrical section of the department during business hours. Where there is any conflict between a specific rule, this chapter and the National Electrical Code, the specific rule shall be observed.

Electrical inspectors will give information as to the meaning or application of the National Electrical Code and this chapter, but will not lay out work or act as consultants for contractors, owners, or users.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-110, filed 7/17/84. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-110, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-110, filed 1/31/78; Order 74-43, § 296-46-110, filed 12/19/74; Order 72-7, § 296-46-110, filed 6/7/72; Order 69-2, § 296-46-110, filed 2/28/69, effective 4/1/69.]

WAC 296-46-130 Classification of occupancies. (1) Educational occupancy refers to a building or portion of a building used primarily for educational purposes and shall include buildings used for the gathering of groups of six or more persons for purposes of instruction. Educational occupancy includes, but is not restricted to: Schools, colleges, academies, and universities.

(2) Institutional occupancy refers to a building or portion of a building used primarily for detention and correctional occupancies where some degree of restraint or security is required. Such occupancies shall include, but are not restricted to: Penal institutions, reformatories, jails, detention centers, correctional centers, and residential-restrained care.

(3) Health care occupancy, in addition to the health care facilities defined in the 1984 National Electrical Code in Article 517-2, shall also include, but is not restricted to the following: Ambulatory surgeries, alcoholism hospitals, alcoholism detoxification facilities, residential treatment facilities for psychiatrically impaired children and youth, and such other health care occupancies where patients who may be unable to provide for their own needs and safety without the assistance of another person are treated.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-130, filed 7/17/84. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-130, filed 2/27/81, effective 4/1/81; Order 72-7, § 296-46-130, filed 6/7/72; Order 69-2, § 296-46-130, filed 2/28/69, effective 4/1/69.]

WAC 296-46-140 Plan review for educational and health care facilities and other buildings. (1) All plans for new or altered electrical installations in educational, institutional, and health care occupancies shall be reviewed and approved by the department before the installations are begun. Refer plans for review to the Electrical Inspection Section, Department of Labor and Industries, 520 South Water Street, Olympia, Washington 98504. Please refer to WAC 296-46-910 for required fees for plan review.

(2) Plan review for new or altered electrical installations of other types of construction may be voluntarily requested by the owner or other interested parties.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-140, filed 7/17/84. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-140, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-140, filed 1/31/78; Order 74-43, § 296-46-140, filed 12/19/74; Order 72-7, § 296-46-140, filed 6/7/72; Order 69-2, § 296-46-140, filed 2/28/69, effective 4/1/69.]

WAC 296-46-150 Wiring methods for designated building occupancies. Wiring methods for institutional, educational, health care facilities, and places of assembly of one hundred or more persons shall be wired as set forth in Article 518 of the National Electrical Code. The wiring methods in Section 518-3, Exception 1 shall not be permitted. For determining the occupant load of places of assembly, the methods in NFPA 101-1981, Life Safety Code shall be used.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-150, filed 7/17/84. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-150, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-150, filed 1/31/78; Order 75-25, § 296-46-150, filed 8/4/75; Order 74-43, § 296-46-150, filed 12/19/74; Order 72-7, § 296-46-150, filed 6/7/72; Order 69-2, § 296-46-150, filed 2/28/69, effective 4/1/69.]

WAC 296-46-160 Service requirements. The serving utility shall be consulted by the owner, the owner's agent, or the contractor making the installation regarding the service entrance location and meter equipment requirements before installing the service and equipment. Provisions for a meter and related equipment, an attachment of a service drop, or an underground service lateral shall be made at a location acceptable to the serving utility. The point of attachment for a service drop must permit the clearances required by the National Electrical Code.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-160, filed 7/17/84; Order 69-2, § 296-46-160, filed 2/28/69, effective 4/1/69.]

WAC 296-46-180 Meter installation. Except as otherwise permitted by the serving utility, the height of the center of the meter shall not be more than 7 feet or less than 5 feet above finished grade or the floor below the meter. Secondary instrument transformer conductors for metering shall not be permitted in the service raceway.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-180, filed 7/17/84; Order 74-43, § 296-46-180, filed 12/19/74; Order 69-2, § 296-46-180, filed 2/28/69, effective 4/1/69.]

WAC 296-46-200 Service entrance conductors. (1) Service entrance conductors shall extend at least 18

inches from the service head to permit connection to the service drop.

(2) Unfused service conductors within a building or structure shall be installed in the metallic raceways, other than electrical metallic tubing, permitted in Section 230-43 of the National Electrical Code or in Schedule 80 rigid nonmetallic conduit. The raceway shall extend no more than fifteen feet inside the building or structure.

(3) Service conductors under the exclusive control of the serving utility, when installed within a building or structure shall be installed in rigid steel galvanized conduit or Schedule 80 nonmetallic conduit and shall comply with subsection (2) of this section. The grounded conductor may be identified with a yellow jacket.

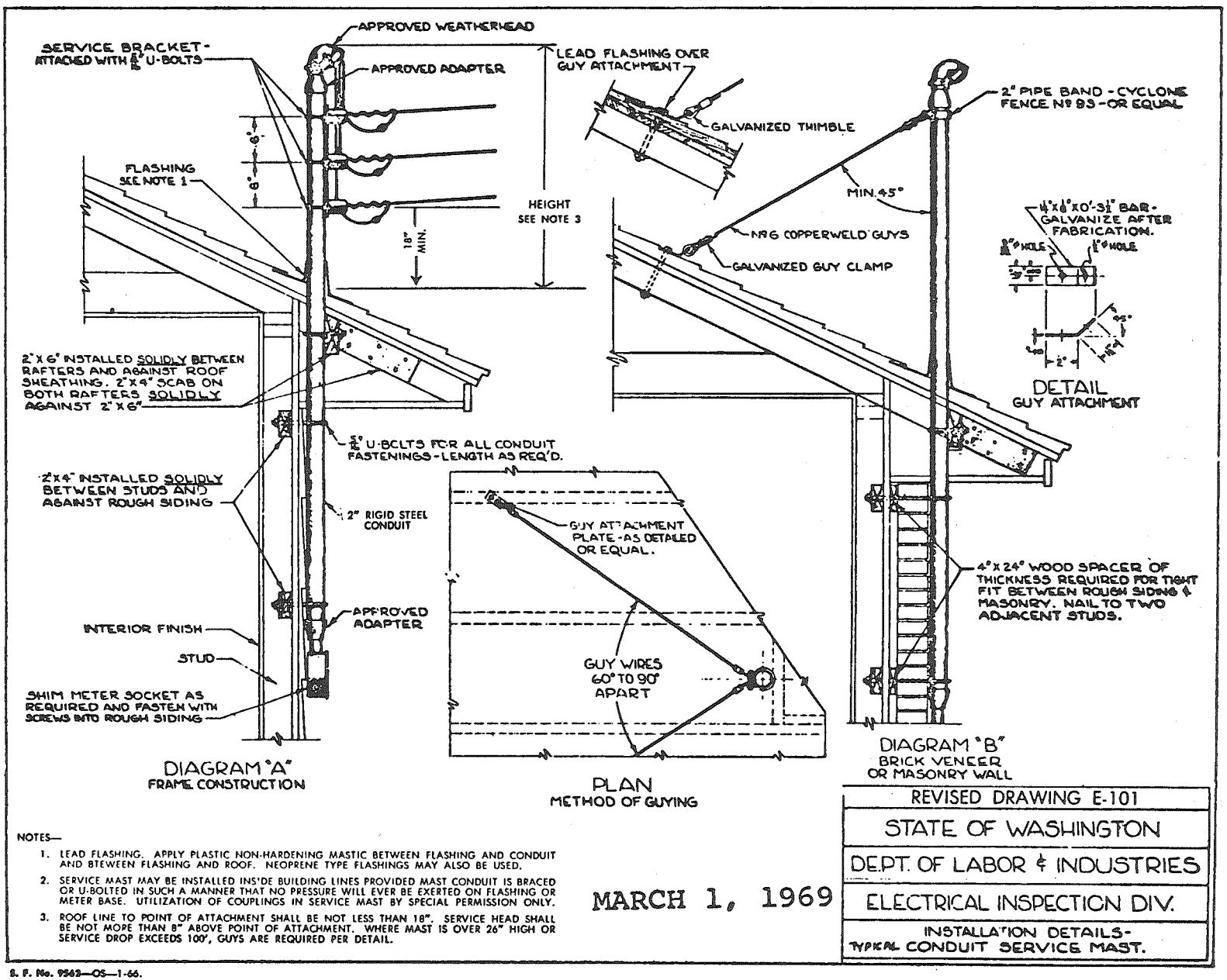
[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-200, filed 7/17/84. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-200, filed 1/31/78; Order 74-43, § 296-46-200, filed 12/19/74; Order 73-7, § 296-46-200, filed 5/17/73; Order 69-2, § 296-46-200, filed 2/28/69, effective 4/1/69.]

WAC 296-46-220 Service equipment. Service equipment, sub-panels, and similar electrical equipment shall be installed so that they are readily accessible and shall not be installed in bathrooms, clothes closets, shower rooms, cupboards, or attics, or above washers, clothes dryers, or plumbed-in fixtures. All service equipment and sub-panel equipment shall be adequately illuminated.

Service switches and other equipment exposed to elements of the outside weather shall be rain tight type factory built for the purpose. Refer to NEMA-3R.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-220, filed 7/17/84. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-220, filed 1/31/78; Order 72-7, § 296-46-220, filed 6/7/72; Order 69-2, § 296-46-220, filed 2/28/69, effective 4/1/69.]

WAC 296-46-240 Service mast. A service entrance conduit extended through the roof to provide a means of attaching the service drop shall be no smaller than 2-inch rigid steel galvanized conduit. It shall provide a structurally sound attachment for the service drop and shall be equipped with a properly installed flashing at the roof line. Installation shall comply with drawings E-101 and E-102, or shall provide equivalent strength by other approved means.



NOTES—

1. LEAD FLASHING. APPLY PLASTIC NON-HARDENING MASTIC BETWEEN FLASHING AND CONDUIT AND BTEWEEN FLASHING AND ROOF. NEOPRENE TYPE FLASHINGS MAY ALSO BE USED.
2. SERVICE MAST MAY BE INSTALLED INSIDE BUILDING LINES PROVIDED MAST CONDUIT IS BRACED OR U-BOLTED IN SUCH A MANNER THAT NO PRESSURE WILL EVER BE EXERTED ON FLASHING OR METER BASE. UTILIZATION OF COUPLINGS IN SERVICE MAST BY SPECIAL PERMISSION ONLY.
3. ROOF LINE TO POINT OF ATTACHMENT SHALL BE NOT LESS THAN 18". SERVICE HEAD SHALL BE NOT MOPE THAN 8" ABOVE POINT OF ATTACHMENT. WHERE MAST IS OVER 26" HIGH OR SERVICE DROP EXCEEDS 100', GUYS ARE REQUIRED PER DETAIL.

MARCH 1, 1969

REVISED DRAWING E-101

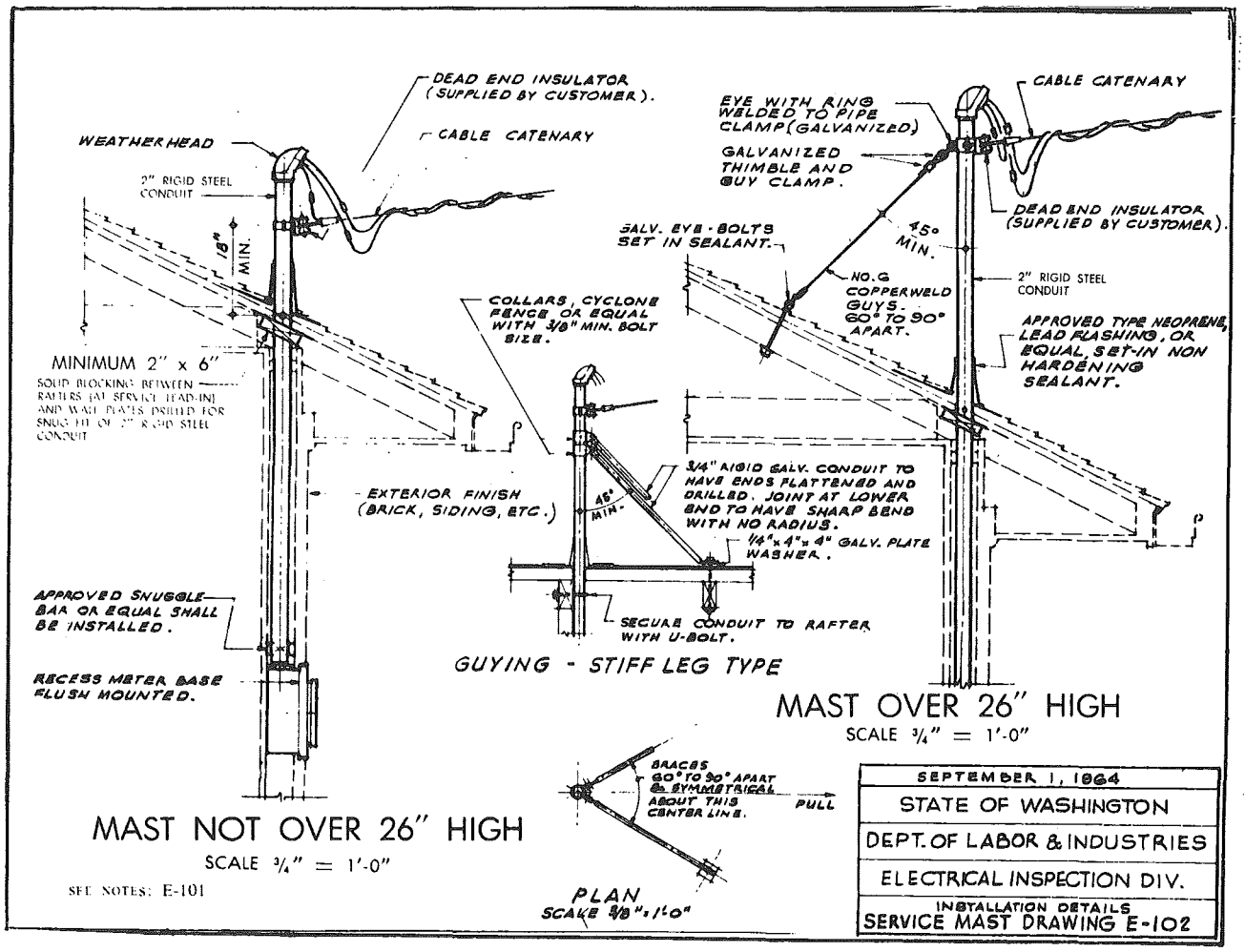
STATE OF WASHINGTON

DEPT. OF LABOR & INDUSTRIES

ELECTRICAL INSPECTION DIV.

INSTALLATION DETAILS- TYPICAL CONDUIT SERVICE MAST.

S. F. No. 9562—OS—1-66.



[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-240, filed 7/17/84; Order 69-2, § 296-46-240, filed 2/28/69, effective 4/1/69.]

WAC 296-46-348 Electrical metallic tubing. In addition to complying with the provisions of Article 348 of the National Electrical Code, electrical metallic tubing shall not be installed in direct contact with the earth or in concrete on or below grade. See also section 300-6 of the National Electrical Code.

Electrical metallic tubing shall not be installed as the wiring method for service entrance conductors inside a building.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-348, filed 8/29/86.]

WAC 296-46-350 Emergency systems. Exit and emergency lights shall be installed in accordance with the National Electrical Code, Article 700, and Life Safety Code NFPA 101 in all health care facilities, educational facilities, hotels, motels, and places of assembly. Installation shall be made in strict accordance with the National Electrical Code, Article 700, and WAC 296-46-150.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-350, filed 7/17/84. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-350, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-350, filed 1/31/78; Order 72-7, § 296-46-350, filed 6/7/72; Order 69-2, § 296-46-350, filed 2/28/69, effective 4/1/69.]

WAC 296-46-360 Amusement rides or structures, carnivals, circuses, and traveling shows. (1) Electrical installations. Service equipment, separately derived systems, feeders and circuits for each amusement ride, structure or concession and the interconnection of each ride, structure or concession, shall comply with the National Electrical Code and this chapter. Feeders for portable rides, structures or concessions shall be type "S" flexible cord or an equivalent.

(2) Disconnecting means. A separate, enclosed, externally operable fused switch or circuit breaker, shall be installed on each amusement ride, structure or concession to disconnect all electrical equipment. The disconnecting means shall be readily accessible.

(3) Rotating equipment. Components of amusement rides or structures which rotate more than three hundred sixty degrees and which have electrically operated equipment, shall be supplied by approved collector rings

which shall be totally enclosed or located so they are accessible to authorized personnel only. The collector rings shall be factory produced with an equipment grounding segment having a voltage and current rating which equals or exceeds the rating of the current carrying segments. Collector rings shall have an ampacity not less than one hundred twenty-five percent of the full-load current of the largest device served plus the full-load current of all other devices served. Collector rings for control and signal purposes shall have an ampacity not less than one hundred twenty-five percent of the full-load current of the largest device served plus the full-load current of all other devices served.

(4) Equipment grounding. All noncurrent carrying metal parts of amusement rides and structures shall be grounded in accordance with the National Electrical Code and these rules. The metallic structure shall not be used as a current carrying conductor.

Exception: The metallic structure shall be permitted to be used as the return path for low voltage systems which do not exceed thirty volts, provided that the ungrounded conductors are protected by an overcurrent device in accordance with the National Electrical Code and the system is factory built for such use.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-360, filed 8/29/86. Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-360, filed 7/17/84; Order 69-2, § 296-46-360, filed 2/28/69, effective 4/1/69.]

WAC 296-46-370 Boat moorages and similar installations. Docks, wharves, boat moorages, and similar facilities in addition to complying with Article 555 of the National Electrical Code shall have a disconnect located on the shoreline for all services of 600 volts or less.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-370, filed 7/17/84; Order 75-25, § 296-46-370, filed 8/4/75; Order 72-7, § 296-46-370, filed 6/7/72; Order 69-2, § 296-46-370, filed 2/28/69, effective 4/1/69.]

WAC 296-46-420 Electrical equipment grounding. All electrical equipment grounding for nonmetallic cable systems shall be completely made up at the time of the inspection.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-420, filed 7/17/84; Order 69-2, § 296-46-420, filed 2/28/69, effective 4/1/69.]

WAC 296-46-480 Location of pad-mounted transformers. (1)A pad-mounted transformer installation is an installation of an oil-filled transformer outdoors in which installation of all bushings, handholes, and live and operating parts are guarded by a solid metal enclosure secured so that they are accessible to authorized qualified personnel only. This does not prohibit the use of approved glass monitoring devices or properly baffled ventilators.

(2) If a pad-mounted transformer is to be installed next to a structure of combustible material, it shall not be installed closer than eight feet to the structure. This eight foot separation shall be measured from the nearest metal portion of the pad-mounted transformer installation to the nearest building features required to be safeguarded. If there are overhanging eaves or roof lines of combustible material on a standard single story structure, the eight foot measurement should be made to provide eight feet of clear space between the eaves and the nearest metal portion of the pad-mounted transformer installed outside a vertical line extended from the ends of the eaves to the ground if this distance is at least eight feet horizontally from all combustible walls. In addition, the grade of the ground at the location of the pad-mounted transformer shall be such that any oil leaking from the transformer will flow away from the building and will not form pools. As an exception to subsection (2) of this section, in an urban residential area that has an improved alleyway, and in which a pad-mounted transformer is to be installed next to a noninhabited structure of combustible material the transformer shall not be installed closer than two feet to the structure.

(3) Pad-mounted transformers shall not be installed nearer than two feet, measured horizontally, to a noncombustible building surface having no doors, windows, or other openings closer to the transformer than eight feet.

(4) Pad-mounted transformers should not be located where they are exposed to damage by automobiles, trucks, or other mobile machinery. If transformers are installed in areas subject to traffic other than pedestrian traffic, they shall be provided with additional guarding.

(5) Pad-mounted transformer installations shall be effectively grounded as provided in Section 250-51 of the National Electrical Code.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-480, filed 7/17/84. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-480, filed 1/31/78; Order 69-2, § 296-46-480, filed 2/28/69, effective 4/1/69.]

WAC 296-46-490 Location of total underground transformers. Enclosures for total underground oil filled transformers shall not be located within eight feet of a doorway or fire escape. Adequate space shall be maintained above the total underground transformer enclosure so that a boom may be used to lift the transformer.

[Statutory Authority: RCW 19.28.010 and 19.28.060. 84-15-051 (Order 84-10), § 296-46-490, filed 7/17/84; Order 69-2, § 296-46-490, filed 2/28/69, effective 4/1/69.]

WAC 296-46-495 Electrical work permits and fees. Inspections shall not be made nor services connected unless an electrical work permit is completely and legibly filled out and readily available.

Electrical work permits shall be obtained prior to beginning the installation or alteration. Electrical work permits shall expire one year after the date of purchase unless electrical work is actively and consistently in progress. Fees shall be paid in accordance with the inspection fee schedule WAC 296-46-910 (Appendix F).

Each electrical work permit shall be signed by the electrical contractor's administrator (or designee) or the person, firm, partnership, corporation, or other entity

which is performing the electrical installation or alteration.

[Statutory Authority: RCW 19.28.060 and 19.28.210. 85-20-065 (Order 85-16), § 296-46-495, filed 9/27/85. Statutory Authority: RCW 19.28.060. 78-02-098 (Order 77-31), § 296-46-495, filed 1/31/78.]

WAC 296-46-600 Portable outdoor electrical signs. A weatherproof receptacle outlet which is weatherproof with the supply cord connected shall be installed within six feet of each electrical sign. Extension cords shall not be permitted. All new portable outdoor electrical signs shall be listed by an electrical testing laboratory which has been accredited by the department. Existing portable signs which are not listed or which do not have ground-fault circuit-interrupter protection, as required by section 600-11 of the National Electrical Code, shall have ground-fault circuit-interrupter protection provided in the branch circuit which supplies the portable sign.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-600, filed 8/29/86.]

WAC 296-46-680 Hydromassage bathtubs. (1) Electrical equipment associated with hydromassage bathtubs shall be listed by an electrical products testing laboratory which is accredited by the department and shall have the supply circuit protected by a ground-fault circuit-interrupter.

(2) Receptacle outlets. Receptacle outlets shall not be located closer than six feet to a hydromassage bathtub unless located above or within one foot of a basin or vanity, in which case a receptacle outlet shall be permitted to be located no closer than three feet to the inside walls of a hydromassage bathtub. Receptacles located within the room or within twelve feet from the inside walls of a hydromassage bathtub, shall be protected by a ground-fault circuit-interrupter. A door or sliding window is not considered to be a permanent barrier.

(3) Lighting fixtures and lighting outlets. Lighting fixtures other than the pendant or hanging type shall be permitted above a one-person hydromassage bathtub if all of the following conditions are met:

(a) The fixture is of the totally enclosed type;

(b) The distance from the bottom of the fixture to the maximum water level is not less than five feet;

(c) The fixture is rigidly attached to the wall or ceiling; and

(d) A ground-fault circuit-interrupter is installed in the branch circuit supplying the fixture(s).

(4) Wall switches. Switches shall be located at least three feet measured horizontally from the inside walls of the hydromassage bathtub. Circuits controlled by wall switches located within six feet of the hydromassage bathtub shall be protected by a ground-fault circuit-interrupter.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-680, filed 8/29/86.]

WAC 296-46-910 Inspection fees. To calculate the inspection fees, the amperage is based on the larger of the conductor ampacity or the over current device.

(1) The fee for inspection of the installation, alteration, or maintenance of the following service(s), or feeder(s), is:

		Residential Services Column A	Commercial/ Industrial Column B	Additional Feeders in Commercial/ Industrial Column C
1 – 100	AMP –	$ 30	$ 40	$ 30
101 – 200	AMP –	$ 40	$ 60	$ 30
201 – 400	AMP –	$ 55	$100	$ 50
401 – 600	AMP –	$ 70	$140	$ 70
601 – 1000	AMP –	$ 85	$180	$ 90
1001 – Over	AMP –	$100	$220	$110
Two family dwelling		$ 50		
Temporary Construction Service		$ 30		

No additional fee for inspection of branch circuits when included on the service/feeder permit.

Column A – Residential
- Single family residential services.
- Multi family residential services.

Column B – Commercial and industrial
- Each service or the first feeder when the service is not being installed, increased or altered.
- Feeders that terminate in a separate building.
- Secondaries of transformers that have a capacity greater than 600 VA.
- Each service or feeder that is over 600 volts.

Column C – Additional feeders in commercial and industrial facilities
- Each feeder inspected with a service or feeder in Column B at the same time and on the same permit.

(2) The following fees shall be provided for the inspection of each of the following units:

	Single/first Unit Column A	Additional Units Column B
a. Mobile home, modular home, or commercial coach service. (200 Amp. Max.)	25	10*
b. Mobile home feeder.	25	10*
c. Each lot for a recreational vehicle.	25	10
d. Berth at a marina or dock.	25	10
e. Yard pole meter loops or similar isolated metering installations.	25	10
f. Outbuilding(s) on residential property:		
1. served by a 60 Ampere or larger feeder –	25	
2. served by a circuit or a feeder less than 60 Amperes –		10
g. Motors 10 HP or larger	25	10
h. Multi-family dwelling feeders	25	10
i. Signs	25	10

Column A The fee for inspection of a single unit or the first of several units when a service or feeder in (1)(A) or (1)(B) is not installed.

Column B The fee for inspection of additional units when they are inspected at the same time, at the same location and on the same permit as a unit in Column (1)(A), (1)(B), or (2)(A).

*Total fee for inspection of one service and feeder for a mobile home when they are inspected at the same time is $35.00.

The above fees are in addition to master meter, mobile home park, recreational vehicle park, marina shore services and/or the main service(s).

(3) The fee for new circuits, circuit extensions, and circuit alterations where the service or feeder is not modified, shall be $30 for one to four circuits inspected at the same time on the same premises under a single permit plus $1 for each additional circuit. The total fee shall be no greater than the fee for a new service of like ampacity.

(4) Low voltage systems. The fee for inspection of residential, burglar or fire alarm systems, and other Class 2, low voltage systems shall be $25 for one to four circuits (zone) plus $1 for each additional circuit (zone). For commercial or industrial, Class 2, low voltage system installations, the minimum fee shall be $25 for the control panel plus $5 for each zone.

(5) In addition to the service and feeder installation fees, the fee for inspecting each electrically driven irrigation machine is $50 including tower and drive motors.

(6) The fee for emergency, standby, and resource recovery generators up to 50 KVA is $25. The fee for a generator installation larger than 50 KVA, or that is the main source of power, is that for the applicable service in subsection (1) of this section.

(7) Fees for carnival electrical inspections.

a. Preseason inspection, $40 per hour.

b. The first field inspection of each ride, concession, or generator which has not had a preseason inspection shall be $10.

c. For subsequent inspections, the fee shall be $40 for the first ten rides, concessions, or generators, and $2 each for all additional rides, concessions, and generators. If a ride, concession, or generator has no insignia of inspection for the calendar year, the fee for that ride, concession, or generator shall be that charged in b. of this subsection.

(8) Trip fees. A fee of $25 shall be paid before approval of the installation if the following services are necessary:

a. Requests to inspect existing installations. After the first one half hour, an additional $25 fee shall be provided for each one half hour of inspection time.

b. Trips to inspect when the permit submitter has given notice to the inspector that the work is ready for inspection when it is not.

c. An additional inspection trip is necessary because the submitter has given an erroneous or incomplete address.

d. More than one additional inspection trip per permit to inspect corrections required by the inspector as a result of carelessness or neglect, or for improperly responding to a corrective notice.

e. Each trip necessary to remove a noncompliance citation from the jobsite, posted because unlicensed electrical contractors or uncertified electricians or trainees were working on the jobsite.

f. When corrections have not been made in the prescribed time, unless an exception has been requested and granted.

(9) Double fees. A double inspection fee shall be charged for:

a. Installations that are covered or concealed before inspection;

b. Failure to obtain the electrical work permit prior to beginning the installation or alteration. Exception – emergency repairs to existing electrical systems.

(10) On jobs requiring partial or progress inspections, "one" inspection of one half hour duration is allowed per $25 of fee.

(11) The fee for a plan review request pursuant to WAC 296-46-140 (1) and (2) is thirty-five percent of the electrical work permit fee as determined by WAC 296-46-495, plus a fee of $35. The fee for review of electrical plans voluntarily requested pursuant to WAC 296-46-140(4) and for supplemental submissions of plans is $30 per hour or a fraction of an hour.

[Statutory Authority: RCW 19.28.060 and 19.28.210. 85-20-065 (Order 85-16), § 296-46-910, filed 9/27/85. Statutory Authority: RCW 19.28.210. 83-16-058 (Order 83-20), § 296-46-910, filed 8/2/83. Statutory Authority: RCW 19.28.060 and 19.28.210. 82-18-036 (Order 82-29), § 296-46-910, filed 8/26/82. Statutory Authority: RCW 19.28.060. 81-06-037 (Order 81-5), § 296-46-910, filed 2/27/81, effective 4/1/81; 78-02-098 (Order 77-31), § 296-46-910, filed 1/31/78.]

WAC 296-46-915 Electrical contractor license, administrator certificate and examination, and copy fees.

(1) General or specialty contractor license (per twenty-four month period)	$72
(2) Administrator certificate examination application (nonrefundable)	$20
(3) Administrator certificate examination	$50
(4) Administrator certificate or renewal (per twenty-four month period)	$48
(5) Late renewal of administrator certificate (per twenty-four month period)	$96
(6) Transfer of administrator designation	$10
(7) Certified copy of each document (maximum $24 per file)	$2

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-915, filed 8/29/86.]

WAC 296-46-920 Civil penalty. A person, firm, partnership, corporation or other entity that violates a provision of chapter 19.28 RCW, chapter 296-46 or 296-401 WAC is liable for a civil penalty based upon the following schedule.

(1) Offering to perform, submitting a bid for, installing or maintaining conductors or equipment that convey or utilize electrical current without having an unexpired, unrevoked and unsuspended electrical contractor license.	First offense: Second offense: Third offense: Each offense thereafter:	$ 500 $1,000 $3,000 $5,000
(2) Employing an individual for the purposes of RCW 19.28.510 through 19.28.620 who does not possess a valid certificate of competency or training certificate.	First offense: Second offense: Each offense thereafter:	$ 50 $ 100 $ 250
(3) Working as an electrician or electrical trainee in the electrical construction trade without having a valid certificate of competency or electrical training certificate.	First offense: Second offense: Each offense thereafter:	$ 50 $ 100 $ 250
(4) Employing electricians and trainees in an improper ratio.	First offense: Second offense: Each additional offense:	$ 50 $ 100 $ 250
(5) Failing to provide supervision to an electrical trainee as required by RCW 19.28.510.	First offense: Second offense: Each additional offense:	$ 50 $ 100 $ 250
(6) Working as an electrical trainee without proper supervision as required by RCW 19.28.510.	First offense: Second offense: Each additional offense:	$ 50 $ 100 $ 250
(7) Performing electrical installations, alterations or maintenance outside the scope of the firm's specialty electrical contractors license.	First offense: Second offense: Each additional offense:	$ 500 $1,000 $3,000
(8) Selling or exchanging electrical equipment associated with spas, hot tubs, swimming pools or hydromassage bathtubs which is not listed and labeled by an approved electrical testing laboratory.	First offense: Second offense: Each additional offense:	$ 500 $1,000 $2,000

Definition: The sale or exchange of electrical components associated with hot tubs, spas, swimming pools or hydromassage bathtubs means: "Sell, offer for sale, advertise, display for sale, dispose of by way of gift, loan, rental, lease, premium, barter or exchange."

(9) Violating any of the provisions of chapter 19.28 RCW or chapters 296-46 or 296-401 WAC which are not identified in subsections (1) through (8) of this section.	First offense: Second offense: Each additional offense:	$ 50 $ 100 $ 250

(10) Each day that a violation occurs will be a separate offense. A violation will be a "second" or "additional" offense only if it occurs within one year from the first violation.

(11) In case of continued, repeated or gross violation of the provisions of chapter 19.28 RCW, chapter 296-46 or 296-401 WAC or if property damage or bodily injury occurs as a result of the failure of a person, firm, partnership, corporation, or other entity to comply with chapter 19.28 RCW, the department may double the penalty amounts shown in subsections (1) through (6) of this section.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-920, filed 8/29/86.]

WAC 296-46-930 Electrical contractor license and administrator certificate designation. See RCW 19.28.120.

(1) General electrical license and/or administrator's certificate encompasses all phases and all types of electrical installations.

(2) Specialty (limited) electrical licenses and/or administrator's certificates are as follows:

(a) Residential (02): Limited to the wiring of one and two family dwellings, or multifamily dwellings not exceeding three floors above grade. All wiring to be in nonmetallic sheathed cable, except service and/or feeders. This specialty does not include wiring commercial occupancies such as motels, hotels, offices, or stores.

(b) Pump and irrigation (03): Limited to the electrical connection of domestic and irrigation water pumps, circular irrigating systems and related pumps and pump houses. This specialty license includes circuits, feeders, controls, and services to supply said pumps.

(c) Signs (04): Limited to placement and connection of signs and outline lighting, the electrical supply, related controls and associated circuit extensions thereto; and the installation of a maximum 60 ampere, 120/240 volt single phase service to supply power to a remote sign only.

(d) Domestic appliances (05): Limited to the electrical connection of household appliances and the wiring thereto; such as hot water heaters, ranges, dishwashers, clothes dryers, oil and gas furnaces, and similar appliances. This specialty license includes circuits to the appliances; however, it does not include the installation of service and/or feeders or circuits to electric furnaces and heat pump equipment.

(e) Limited energy system (06): Limited to the installation of signaling and power limited circuits and related equipment. Such license includes the installation of fire protection signaling systems, intrusion alarms, nonutility owned communications systems, and such similar low energy circuits and equipment.

(f) Nonresidential maintenance (07): Limited to maintenance, repair and replacement of electrical equipment and conductors on industrial or commercial premises. This specialty certificate of license does not include maintenance activities in hotel, motel, or dwelling units.

(3) Combination specialty electrical contractor license. The department may issue a combination specialty electrical contractor license to a firm which qualifies for more than one specialty electrical contractor license. The license shall plainly indicate the specialty licenses which are included in the combination electrical contractor license.

(4) Combination specialty electrical administrator certificate. The department may issue a combination specialty administrator certificate to an individual who qualifies for more than one specialty administrators' certificate. The combination specialty administrators' certificate shall plainly indicate the specialty administrators' certificate the holder has qualified for.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86-18-041 (Order 86-23), § 296-46-930, filed 8/29/86.]

WAC 296-46-940 Electrical contractor license. (1) The department shall issue an electrical contractor license to a person, firm, partnership, corporation or other entity that complies with RCW 19.28.120 which shall expire twenty-four months following the date of issue.

The department may issue an electrical contractor license for a period greater or less than twenty–four months for the purpose of equalizing the number of electrical contractor licenses which expire each month. The department shall prorate the electrical contractor license fee according to the number of months in the license period. All subsequent licenses shall be issued for a twenty–four month period.

(2) Cash or securities deposit release. A cash or security deposit which has been filed with the department in lieu of a surety bond, shall not be released until one year after the date the electrical contractor notifies the department in writing, that the person, firm, partnership, corporation, or other entity who (which) has been issued the electrical contractor license, has ceased to do business in the state of Washington.

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86–18–041 (Order 86–23), § 296–46–940, filed 8/29/86.]

WAC 296–46–950 Administrators certificate. (1) The department shall issue an administrator certificate to a person who qualifies for a certificate in accordance with RCW 19.28.125. The first certificate issued shall expire on the person's birthdate at least one year and not more than three years from the date of issue. If a person was born in an even numbered year, the certificate shall expire on the holder's even numbered birthdate. If the person was born in an odd numbered year, the certificate shall expire on the holder's odd numbered birthdate. The department shall prorate the administrators certificate fee according to the number of months or major portions of months in a certificate period. All subsequent certificates shall be issued for a twenty–four month period. The signature of a person who desires to renew their certificate shall be notarized.

(2) Effective July 1, 1987, an administrator designated on the electrical contractor license shall be a member of the firm who shall fulfill the duties of a full–time supervisory employee, or be a full–time supervisory employee. In determining whether the person is a member of the firm, the department shall require that the person is named as the sole proprietor, a partner or an officer in a corporation as shown on the electrical contractor license application on file with the department. In determining whether a person is a full–time supervisory employee, the department shall consider whether the person is on the electrical contractor's full–time payroll; receives a regular salary or wage similar to other employees; has supervisory responsibility for work performed by the electrical contractor and carries out the duties shown in RCW 19.28.125(2).

[Statutory Authority: RCW 19.28.060, 19.28.600 and chapter 19.28 RCW. 86–18–041 (Order 86–23), § 296–46–950, filed 8/29/86.]

Chapter 296–47 WAC
ELECTRICAL WIRING AND APPARATUS

Reviser's note: On March 29, 1961, the department of labor and industries filed with the code reviser's office the November 1959 edition of the N.B.F.U. National Electrical Code #70.

On March 31st, the code reviser received a letter from the department stating that such code was adopted by the procedure prescribed by law.

The text of the National Safety Code has been omitted from publication under the authority of RCW 34.04.050(3). Copies are available from the department of labor and industries.

Chapter 296–49 WAC
GOVERNOR'S MOBILE HOME AND RECREATIONAL VEHICLE ADVISORY BOARD

WAC

296–49–005	Foreword.
296–49–010	Definitions.
296–49–015	Officers.
296–49–020	Internal management.
296–49–025	Duties.
296–49–030	Hearings.
296–49–035	Appearance and practice before board.
296–49–040	Solicitation of business unethical.
296–49–045	Standards of ethical conduct.
296–49–050	Appearance by former employee.
296–49–055	Former employee as expert witness.
296–49–060	Computation of time.
296–49–065	Administrative Procedure Act.

DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296–49–001	Conditions of reciprocity. [Order 73–14, § 296–49–001 and 296–49–011, filed 7/31/73.] Recodified as WAC 296–48–011.
296–49–012	Agreements with out–of–state jurisdictions. [Order 73–14, § 296–49–012, filed 7/31/73.] Recodified as WAC 296–48–012.

WAC 296–49–005 Foreword. The state mobile home and travel trailer law, RCW 43.22.420, establishes the governor appointed mobile home and recreational vehicle advisory board and fixes its administrative responsibilities. The advisory board's principal function is to assist the director of labor and industries in adopting and promulgating reasonable rules and regulations in furtherance of safety to life and property with respect to plumbing, heating and electrical installations, minimum inspection procedures and the adoption of rules and regulations pertaining to the manufacture of mobile homes and recreational vehicles. While the advisory board will, upon request of the director of the department of labor and industries or the mobile home and recreational vehicle section thereof, aid in the administrative interpretation of the national codes and rules and regulations covering standards for plumbing, heating and electrical installations in the state of Washington, it will not function as board of appeal nor will it render decisions concerning the application or interpretation of any adopted rules and regulations to any person, firm or corporation engaged in the business of manufacturing mobile homes or recreational vehicles.

The primary purpose of the following rules is to provide a uniform procedure whereby persons, firms or corporations interested in communicating with the department of labor and industries on any subject matter relative to rules and regulations which should be adopted, amended or repealed for plumbing, heating or electrical installations in the state of Washington or relative to the operation of the mobile home and recreational vehicle section of such department may be heard.

[Order 70-3, § 296-49-005, filed 4/29/70.]

WAC 296-49-010 Definitions. Whenever used in these rules, the words:

BOARD: Shall mean the Washington state mobile home and recreational vehicle advisory board appointed by the governor pursuant to RCW 43.22.420.

DEPARTMENT: Shall mean the department of labor and industries of the state of Washington.

DIRECTOR: Shall mean the director of the department of labor and industries.

REGULAR MEETING: Shall mean the quarterly meetings held by the board on the last Friday of the months February, May, August and November.

SPECIAL MEETING: Shall mean any meeting of the board called by the chairman thereof or the director and held at times other than the regular meetings.

[Order 70-3, § 296-49-010, filed 4/29/70.]

WAC 296-49-015 Officers. In addition to the chairman and secretary of the board, as provided for by RCW 43.22.420, the board shall elect from its members a vice chairman who shall perform all functions of the chairman in his absence.

[Order 70-3, § 296-49-015, filed 4/29/70.]

WAC 296-49-020 Internal management. The board shall adopt written rules of procedure for its internal management which shall include, *Roberts' Rules of Order, Revised,* copies of such rules of procedure shall be made available to interested persons upon written request.

[Order 70-3, § 296-49-020, filed 4/29/70.]

WAC 296-49-025 Duties. (1) The board shall study proposed rules and regulations submitted to it by the director or by the mobile home and recreational vehicle section of the department and shall make recommendations to the director concerning their adoption and promulgation.

(2) The board shall further develop and submit for consideration to the director administrative procedures, organizational plans and rules relating to improving the function of the mobile home and recreational vehicle section.

(3) The board shall at each regular or special meeting consider any written proposals made by any persons, firms or corporations for new rules or regulations or for changes in administrative procedures of the mobile home and recreational vehicle section provided such proposals are submitted in writing to the secretary of the board at least fifteen days prior to any such meeting so that the same may be properly included on the agenda for such meeting.

[Order 70-3, § 296-49-025, filed 4/29/70.]

WAC 296-49-030 Hearings. Any person, firm or corporation desiring to be heard on any subject matter relative to rules or regulations which should be adopted, amended or repealed for plumbing, heating and electrical installations in the state of Washington, or relative to the operation of the mobile home and recreational vehicle section of such department at any regular meeting of the board shall present a written request to that effect to the secretary of the board at least fifteen days prior to the next regular meeting, setting forth a summary of any and all proposals on which the hearing is requested.

[Order 70-3, § 296-49-030, filed 4/29/70.]

WAC 296-49-035 Appearance and practice before board. No person may appear in a representative capacity before the board other than the following:

(1) Attorneys at law duly qualified and entitled to practice before the supreme court of the state of Washington.

(2) Attorneys at law duly qualified and entitled to practice before the highest court of record of any other state, if the attorneys at law of the state of Washington are permitted to appear in a representative capacity before administrative agencies of such other state, and if not otherwise prohibited by Washington state law.

(3) A bona fide owner, officer, partner, or full-time employee of an individual, firm, association, organization, partnership, or corporation who appears for such individual, firm, association, organization, partnership or corporation or a person (other than an attorney at law as provided in subparagraphs (1) and (2) above) appointed in writing to represent an individual, firm, association, organization, partnership or corporation.

[Order 70-3, § 296-49-035, filed 4/29/70.]

WAC 296-49-040 Solicitation of business unethical. It shall be unethical for persons acting in a representative capacity before the board to solicit business by circulars, advertisements or by personal communication or interviews not warranted by personal relations, provided that such representatives may publish or circulate business cards. It is equally unethical to procure business by solicitors of any kind.

[Order 70-3, § 296-49-040, filed 4/29/70.]

WAC 296-49-045 Standards of ethical conduct. All persons appearing in proceedings before the board in a representative capacity shall conform to the standards of ethical conduct required of attorneys before the courts of Washington. If any such person does not conform to such standards, the board may decline to permit such person to appear in a representative capacity in any proceeding before the board.

[Order 70-3, § 296-49-045, filed 4/29/70.]

WAC 296-49-050 Appearance by former employee. No former employee of the board or member of the attorney general's staff may at any time after severing his employment with the board or the attorney general appear, except with the written permission of the board, in a representative capacity on behalf of other parties in any proceeding wherein he previously took an active part as a representative of the board.

[Order 70-3, § 296-49-050, filed 4/29/70.]

WAC 296-49-055 Former employee as expert witness. No former employee of the board shall at any time after severing his employment with the board appear, except with the written permission of the board, as an expert witness on behalf of other parties in any proceeding wherein he previously took an active part in the investigation as a representative of the board.

[Order 70-3, § 296-49-055, filed 4/29/70.]

WAC 296-49-060 Computation of time. In computing any period of time prescribed or allowed by the board rules, by order of the board or by any applicable statute, the day of the act, event, or default after which the designated period of time begins to run is not to be included. The last day of the period so computed is to be included.

[Order 70-3, § 296-49-060, filed 4/29/70.]

WAC 296-49-065 Administrative Procedure Act. All proceedings regarding supplemental rules and regulations shall comply, where applicable, with the provisions of the Administrative Procedure Act, chapter 34.04 RCW, and any amendments thereto.

[Order 70-3, § 296-49-065, filed 4/29/70.]

Chapter 296-50 WAC
SAFETY STANDARDS--MANUFACTURE OF EXPLOSIVES

WAC

296-50-010 Foreword.
296-50-020 Introductory.
296-50-030 Management's responsibility.
296-50-040 Employee's responsibility.
296-50-050 Minimum requirements for first aid.
296-50-060 First aid kit.
296-50-070 First aid room.
296-50-080 General regulations.
296-50-090 Dope house.
296-50-100 Dynamite mixing house.
296-50-110 Dynamite pack machine house.
296-50-120 Gelatin mixing house.
296-50-130 Gelatin cartridge machine house.
296-50-140 Handpack house.
296-50-150 Waste opening house.
296-50-160 Box packing house.
296-50-170 Powder repair shop.
296-50-180 Batch nitrator.
296-50-190 Separator and prewash operation.
296-50-200 N.G. neutralizing house and store house.
296-50-210 Acid operations.
296-50-220 Spare parts houses.
296-50-230 Nitrocotton screening and drying houses.

WAC 296-50-010 Foreword. These safety standards are promulgated under and by authority of RCW 49.16.010, 49.16.080, 49.16.090, 49.16.100 and 49.16-.050 by hearing held at Olympia June 28, 1957 for the purpose of direction and guidance of manufacturers of explosives in order to comply with RCW 49.16.030. ". . . to render the work and place of work safe . . . " They shall become effective August 15, 1957. Attention is called to RCW 70.74.010 which reads as follows: "The term 'explosive' or 'explosives' whenever used in this act, shall be held to mean and include any chemical compound or mechanical mixture, that is commonly used or intended for the purpose of producing an explosion that contains any oxidizing and combustible units, or other ingredients in such proportions, quantities or packing, that an ignition by fire, by friction, by concussion, by percussion or by detonator or any part of the compound or mixture may cause such a sudden generation of highly heated gases that the resultant gaseous pressures are capable of producing destructive effects on contiguous objects or of destroying life and limb."

[Foreword, filed 3/23/60, effective 8/15/57.]

WAC 296-50-020 Introductory. For reasons of brevity the safety educational standards as set forth in the general safety standards of the state of Washington, are not reprinted here but attention is called to several educational requirements contained in the above named standards.

[Introductory clause, filed 3/23/60, effective 8/15/57.]

WAC 296-50-030 Management's responsibility. (1) Report directly to the division of safety, Olympia, by telephone or telegraph (collect), immediately, any accident resulting in an immediate or probable fatality.

(2) Equipment involved in an accident resulting in an immediate fatality, shall not be moved, until a representative of the division of safety investigates the accident and releases such equipment, except where removal is essential to prevent further accident. Where necessary to remove the victim such equipment may be moved only to the extent of making possible such removal.

(3) Immediately upon notification of accident, department representative shall inform employer when investigator will be available. If circumstances exist whereby investigation will be delayed, department representative may permit employer to proceed with normal job operations.

(4) Upon arrival of division of safety investigator, employer shall assign to assist the investigator, the immediate supervisor and all employees who were eye witnesses to the accident, or whoever the investigator deems necessary to complete his investigation. Each witness shall give his own version and there shall be no discriminatory action taken for anyone testifying in any investigation.

(5) To prohibit any employee from working on or being in the vicinity of any job while under the influence of or affected by intoxicants. Employers shall be responsible for the actions of any employee known to be in an intoxicated condition while on the job.

(6) Assume the responsibility of work assignment so that no member of any production or maintenance crew shall be required to work in a position or location so isolated from other members of the crew that he is not in ordinary calling distance in case of an emergency.

(7) Make sure that every man has been trained for the work he is assigned to and has been thoroughly instructed in his duties and responsibilities.

[Rule 1, filed 3/23/60, effective 8/15/57.]

WAC 296-50-040 Employee's responsibility. He shall not report to the job while under the influence of intoxicants and shall not use intoxicants or drugs covered by the federal narcotics act while on the job.

To advise inexperienced fellow employees of safe ways to do their work and warn them of dangers to be guarded against.

Employees shall wear, use and properly care for personal protective safety equipment issued to them and return same to employer on termination of employment.

Workmen exposed to overhead hazards shall wear approved safety hats.

Employees should wear safety shoes when their feet are exposed to hazards of falling materials.

Safety inspector plan.

Settlement of disputes (safety inspectors).

Safety committee plan.

Settlement of disputes (safety committee).

Safety educational reports.

Safety bulletin board.

[Rule 2, filed 3/23/60, effective 8/15/57.]

WAC 296-50-050 Minimum requirements for first aid. (1) RCW 51.36.030 provides that: "Every employer, who employs less than fifty workmen, shall keep at his plant a first aid kit equipped as required by the department with materials for first aid to his injured workmen. Every employer who employs within a radius of one-half mile of any plant or establishment fifty or more workmen, shall keep one first aid station equipped as required by the department with materials for first aid to his injured workmen, and shall cooperate with the department in training one or more employees in first aid to the injured. The maintenance of such first aid kits and stations shall be deemed to be a part of any educational standards established under the provisions of sections 7734 and 7736."*

(2) Adequate provisions for the first aid treatment of injured persons shall be maintained at all times in every industrial establishment and on every operation covered by the act.

(3) Employers shall arrange to have as many workmen as possible take a full course in first aid training.

(4) There shall be at least one employee who has either a Red Cross, U.S. bureau of mines, or department of labor and industries current first aid certificate available during all operating hours in each plant, department or branch establishment employing less than 15 persons. (A current first aid certificate is one which is less than 3 years old.)

(5) There shall be at least two employees who have either Red Cross, U.S. Bureau of Mines, or department of labor and industries current first aid certificates available during all operating hours in each plant, department, or branch establishment employing more than 15 persons. (A current first aid certificate is one which is less than 3 years old.)

[Rule 3, filed 3/23/60, effective 8/15/57.]

***Reviser's note:** Section 7734 above is now RCW 49.16.050. Section 7736, which was repealed by Laws of 1927, section 19, page 762, read as follows: "The educational standards for coal mines and coal mining shall be prescribed by a board hereby created to be known as the 'state mining board' consisting of two members to be appointed by the state safety board."

For later law see RCW 43.22.120 et seq. and 78.40.780 et seq.

WAC 296-50-060 First-aid kit. (1) A first-aid kit shall be available on small construction jobs, line crews, and other transient or short duration jobs. On all such operations, or at small plants or division establishments employing less than fifty workmen, there shall be a first aid kit containing the following supplies or their equals as recognized by the plant or establishment medical director or medical consultant, or by the department of labor and industries.

1 package iodine applicators (not less than 6) and 1 package antiseptic applicators (not less than 6) containing some other approved antiseptic.

1 package aromatic spirits of ammonia ampoules and 1 package of ammonia inhalants in ampoules.

1 package water soluble base burn treatment.

6 triangle bandages 40" size.

1 tourniquet – buckle type.

1 1/2" x 5 yards Z. O. adhesive (sterilized).

6 compress bandages 4" x 4" pads (sterilized and individually wrapped in water proof packages).

4 compress bandages 2" x 2" pads (sterilized and individually wrapped in water proof packages).

2 2" roller bandages (sterilized).

6 3" x 3" gauze pads (sterilized and individually wrapped).

1 package 3/4" x 1" water proof adhesive compresses (100 in package).

1 pair scissors and 1 pair tweezers.

Proper antidotes for poisons to which workers may be exposed.

1 package approved eye dressing.

A chart showing clearly the pressure points and tourniquet points of the human body shall be fastened on the inside of the cover or door of the container for ready reference.

(2) All crew trucks, power shovels, cranes, locomotives, loaders, cats, logging trucks, speeders, freight trucks and similar equipment and vehicles shall be equipped with a standard dust and moisture proof first-aid kit (a moisture proof kit is one having a rubber seal around the inside of either of the closing edges to keep

moisture from entering kit when closed) containing the following items:

1 package iodine applicators (not less than 6) and 1 package antiseptic applicators (not less than 6) containing some other approved antiseptic.
4 triangle bandages 40".
3 2" compress bandages.
3 4" compress bandages.
1 package 3/4" or 1" waterproof adhesive compresses (16 in package).
1 tourniquet – buckle type.
1 pair scissors and 1 pair tweezers.
1 package aromatic spirits of ammonia ampoules for internal use.
1 package ammonia inhalants in ampoules.
1 package water soluble base burn treatment.
2 packages 3" x 3" sterile gauze pads—4 to a package.
1 package 18" x 36" gauze (sterile).
1 package 36" x 36" gauze (sterile).
1 package approved eye dressing.
2 2" roller bandages (sterilized).
1 chart showing clearly the pressure points and tourniquet points of the human body shall be fastened on the inside of the cover of the container for ready reference.

(3) In addition to the first–aid kit which must be kept on the equipment or at the place of work, there shall be available within the closest practicable distance from the operations (not to exceed 1/2 mile) the following items:
1 set of arm and leg splints.
2 all wool blankets (properly protected and marked).
1 stretcher.

(4) First–aid instructors will, upon request, be furnished to industries by the division of safety of the department of labor and industries.

(5) All foremen, supervisors, or persons in direct charge of crews should have either a Red Cross, U.S. bureau of mines, or department of labor and industries current first–aid certificate; it being understood that a certificate is void 3 years from date of issue.

(6) Workers whose injuries require the use of a stretcher or ambulance or while being transported by other means shall be accompanied to the hospital by an attendant other than the driver. This attendant shall be first aid trained if possible, and shall ride with the patient.

(7) All ambulances used to transport injured workers shall be equipped with a fracture board as approved by the department of labor and industries.

(8) All drivers of ambulances transporting workmen covered by industrial insurance shall be trained in basic and advanced first aid as approved by the department of labor and industries.

(9) Immediate and proper transportation shall be provided for injured persons requiring the same, and such transportation shall have precedence over all other transportation under the control of the firm or party upon whose operation the accident occurs.

(10) All first–aid kits shall be kept filled and maintained in proper condition.

(11) When practical, a poster shall be fastened and maintained either on or in the cover of each first–aid cabinet and at or near all phones plainly stating the phone numbers of all available doctors, hospitals, and ambulance service within the district of the employer.

(12) Every fixed establishment employing more than 200 persons shall have a first aid room plainly designated as such. It shall be well lighted and well ventilated, kept spotlessly clean and orderly, provided with hot and cold running water, and fully equipped at all times. There shall be either a person who has a current first–aid certificate, or a trained nurse in charge of the first–aid room.

[Rule 4, filed 3/23/60, effective 8/15/57.]

WAC 296-50-070 First–aid room. (1) The minimum first–aid supplies to be kept in the first–aid room shall be:

1 package iodine applicators (not less than 24 in a package) and 1 package antiseptic applicators (not less than 24 in a package) containing some other approved antiseptic.
1 package aromatic spirits of ammonia ampoules and 1 package ammonia inhalants in ampoules.
2 packages water soluble base burn treatment.
6 triangle bandages 40" size.
1 tourniquet – buckle type.
1 1" x 5 yds. Z. O. adhesive (sterilized).
1 2" x 5 yds. Z. O. adhesive (sterilized).
6 compress bandages 2" x 2" pads sterilized and individually wrapped in waterproof packages.
6 compress bandages 4" x 4" pads sterilized and individually wrapped in waterproof packages.
1 package approved eye dressing.
White vaseline.
2 each of 2", 3" and 4" roller bandages (sterilized).
12 3" x 3" sterile gauze pads (individually packaged).
18" x 36" sterile gauze.
1 pair scissors, 1 pair tweezers, medicine droppers, assorted safety pins and paper drinking cups.
1 bottle rubbing alcohol and 1 package absorbent cotton.
6 finger cots.
1 set arm and leg splints.
Proper antidotes for poisons to which workers may be exposed.
A chart clearly showing pressure and tourniquet points shall be fastened on inside of cover or door of materials container.
1 stretcher and 2 all wool blankets (properly protected and marked).
1 container, dust proof, to be used solely for storage of first aid materials.
1 cot, complete with springs, mattress, blankets and 2 pillows (if both men and women are employed in the plant or establishment, privacy shall be provided).
2 hot water bottles.
1 emergency first aid kit, 24 unit size.
Some means of sterilizing tweezers shall be provided for.

(2) The foregoing minimum safety educational and first aid program, of necessity, is briefly covered, and calls for less than average safety work. It is not anticipated that there will be conflict with other existing programs or requirements. It is expected that these minimum requirements will become the basis on which a more complete program, suited to the size and the needs of the individual establishment, will be set up.

(3) Where any firm or majority group of employees of any firm finds that these educational standards cannot be adhered to in the operation involved, an application for adoption of a different plan of safety organization (on the form furnished by the department) may be filed with the division of safety, department of labor and industries. After full investigation of the operation of the firm, and consultation with the management and employees, the department may, if it is found that these educational standards cannot be complied with, approve the plan proposed or another type of plan recommended by the department (at its option) provided it conforms to the following provisions:

(a) The plan provides full management–employee participation.

(b) The plan is based on sound principles of accident prevention.

(c) The result will not be less than that provided in these educational standards.

(d) Any plan approved may be canceled on 30 days' notice by the division of safety after consultation with the management and employees.

(4) No safety program will run itself. To be successful, the wholehearted interest of the employees' group and management must not only be behind the program, but the fact must also be readily apparent to all.

[Rule 5, filed 3/23/60, effective 8/15/57.]

WAC 296-50-080 General regulations. (1) Smoking is positively prohibited on the plant site except in buildings designated.

(2) No matches or lighters shall be permitted in the plant area except in locations designated by management.

(3) A search of the employees for matches shall be made frequently, and at no time shall the interval between searches exceed one month.

(4) Special clothing and shoes free of metal fasteners shall be worn by all employees regularly working in buildings where explosives are handled. Powder shoes shall not be resoled. Any pockets provided should be constructed of cloth mesh.

(5) Neither the shoes or the special clothing as set forth in (4) above shall be worn off the premises but shall be left in the change room.

(6) New employee shall not handle explosives or operate any equipment in connection with the manufacture of explosives until he has received thorough instructions in accordance with established practices.

(7) Employees shall not engage in practical jokes or horseplay.

(8) All tools and brooms must be kept in their proper place when not in use.

(9) Gloves must be changed frequently.

(10) Oily rags, waste and refuse must be kept in special covered containers and contents removed to the waste quite frequently.

(11) All fire equipment such as extinguishers, hose, etc., shall be kept in good condition and inspected quarterly.

(12) All employees shall be instructed in the use of fire extinguishers and other fire apparatus.

(13) Great care shall be exercised in the handling and transportation of all explosives and acids.

(14) Any material known to be contaminated shall not be sent to the powder line.

(15) All major equipment used in connection with the manufacture of explosives shall be grounded and grounding inspected at regular intervals to be determined by management.

(16) Dope cans or buggies shall be kept covered or inverted at all times except when being filled or emptied.

(17) Breathing of fumes of oxides of nitrogen is to be avoided. Should an employee inhale a sufficient amount to cause irritation, the employee should cease work immediately and report to first aid station.

(18) Instruction shall be posted in the first aid station pertaining to the treatment of acid burns and nitric oxide vapors.

(19) Goggles shall be worn by employees grinding sulphur, and respirators shall be stand–by equipment in case of bad atmospheric conditions.

(20) All buildings used in the manufacture of explosives shall be kept clean at all times. Daily, weekly and other regular cleanup schedules shall be established.

(21) No explosives in excess of the normal house limit shall be allowed to remain in operating buildings over night.

(22) Suitable maintenance and lubricating schedules shall be set up for each piece of powder machinery.

(23) All electric switches operating equipment shall be turned off during lunch period and at termination of shift.

(24) Equipment in buildings where explosives are manufactured shall not be worked on unless switch is locked in open position, except for minor adjustments.

(25) Shield shall be provided around all acid valves.

(26) Respirators shall be washed daily and cartridges changed when once used.

(27) All safety doors and exits in the houses handling explosives shall be kept clear at all times. Two alternate exits such as chutes or outside stairways shall be provided for each floor.

(28) Rubber mats or suitable shoe cleaning devices shall be provided and used when entering and before leaving the building.

(29) Do not make any repairs to equipment or to buildings until they have been thoroughly cleaned.

(30) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on.

(31) Extreme care shall be used by all employees in connection with the use of or repairing of acid equipment.

(32) Any unusual conditions occurring should be reported to supervision immediately.

(33) Goggles and rubber gloves should be worn when working on acid cars.

(34) Brooms should be washed frequently.

(35) Employees in powder operations shall not respond to fire alarms to fight fire in clothing contaminated with powder or nitro-cotton.

(36) Operations in all buildings when explosives are being manufactured shall be closed down when there is an electric storm in the vicinity; all light and power switches shall be pulled, and employees are to go to change house until storm is over, except N.G. line must be secured.

(37) Whenever the state explosive inspector enters the plant to inspect the powder line, arrangements shall be made previously by the inspector in setting the date and time of inspection. While the inspection is in progress, the powder line shall not operate.

(38) In order to guard against inadvertent trespasses, all explosive manufacturing plants must be enclosed on all sides by a substantial fence of at least four barbed wires with warning signs (white background – red letters) attached at 100 ft. intervals, reading as follows: EXPLOSIVES—DANGER—KEEP OUT.

If natural barriers such as rivers, lakes, high cliffs, etc., form a boundary line, no fencing shall be required.

[Rules A-1 through A-38, filed 3/23/60, effective 8/15/57.]

WAC 296-50-090 Dope house. (1) Clean and inspect dope screens and brushes twice each shift. Leave screens out overnight. Oil machinery once per shift.

(2) Where electro magnets are used and when ammeter shows less than 3 amperes through magnets, trouble must be corrected before continuing operation.

(3) Keep spare screen on hand at all times for replacing screens with holes, or breaks. Remove defective screen from house immediately after it is replaced.

(4) All materials for delivery to the mixing house shall be thoroughly screened. Dope which falls on the floor under the screen should be swept up and hand screened into the mixing to which it belongs.

(5) Do not send hot dopes to mixing houses. Notify foreman or supervisor if unusual temperatures exist.

(6) Never slide sulfur over floor or down chutes or drop into an empty bin. (Sulfur is subject to static electricity and friction fires and must be handled carefully.) Keep bins full at all times.

(7) Keep dope cans or buggies covered or inverted at all times except when filling or emptying. Examine buggies' interior before filling.

(8) Collect all foreign objects from screen or magnet and send to powder line foreman. Report immediately any unusual material.

(9) Keep house clean and as free of dust as possible at all times.

(10) The following tools are permitted in this building:

Wooden or rubber mallets
Bronze bars on thong
Metal-clad thermometer on thong
Aluminum scoops or
Shovels of aluminum or wood
Brooms and counter brushes
Spare dope screen
Small scales
Wooden hoes

(11) Daily clean-up. Remove screen, clean (wash if necessary) and inspect. Leave screen out overnight. Clean scales, radiators and all interior with compressed air and brush. Brush dirt from exterior of screen and dope cans or buggies. Sweep floors and send all sweepings to waste shed when the accumulation justifies.

(12) Weekly clean-up. In addition to daily clean-up, blow and brush down ceiling, walls and equipment and clean platforms outside the house. Sweep motor room.

(13) Semiannual clean-up. Remove dopes and wash down house.

(14) Powder uniforms and shoes in accordance with WAC 296-50-080(4) must be worn by employees in this house. Goggles and respirators shall be provided for use where needed, particularly when blowing or brushing down a house.

(15) Never work on equipment without pulling switches and locking the starting equipment, except for minor repairs. Pull all electric switches at the end of operating day.

(16) Inspect screens twice each shift or oftener, reporting any holes or breaks immediately to supervisor. Remove defective screen from house for repairs immediately.

(17) Where electro magnets are used, make certain that magnet lights are on during operation of screens. Remove tramp iron from magnets twice per shift and deliver accumulation to the line foreman at regular intervals.

(18) Check grounding frequently. The safety of the powder lines is dependent on receiving supplies free of foreign materials. Do not send any material to the lines unless every reasonable precaution has been taken to eliminate contamination.

(19) Before starting repairs on equipment, such as bins, dryers and screens, adequate precautions should be taken to prevent contamination with foreign substances. Check house and equipment for loose parts after repairs are made.

(20) Keep house clean.

(21) Keep tools, brooms, implements, etc. (when not in use) in the boards, racks or paper bags provided for them.

(22) Keep materials neatly and safely piled and protected to prevent entrance of any foreign material.

(23) See that all fire-fighting equipment is maintained in adequate condition for use at all times.

(24) Keep all bearings well lubricated and free from dust accumulation.

(25) All material prepared for delivery to the powder lines must be screened through six mesh stainless steel screen.

(26) Oily waste and rags must be placed in covered cans provided for that purpose. Clean rags and waste shall be kept in separate covered cans.

(27) Keep oily waste cans outside of buildings.

(28) No welding or open lights to be used at any time in this house without it being washed down prior, and written permission by the management is required.

[Rules B-1 through B-28, filed 3/23/60, effective 8/15/57.]

WAC 296-50-100 Dynamite mixing house. (1) Man limit – 3 employees, except supervision and truckers, provided, however, that 5 men may be used in tray–bagging operations where open tray is used for bagging and the operation is entirely manual.

(2) Oil machines and inspect carefully before starting to see that all equipment is in proper operating condition and that no foreign material is in bowls. See that bonding is secure. Run bowls empty for a short interval.

(3) If machine is not operating satisfactorily, shut down and notify foreman.

(4) Inspect screens used over bowls carefully before starting operation and before each mixing.

(5) If powder does not appear normal or there is any indication that it will not work satisfactorily for cartridging machines, notify foreman.

(6) Clean accumulation of dopes from equipment over bowl and edge of bowl after each dope is dumped.

(7) Sweep floor after each mixing.

(8) Do not mix and hold more powder in the house than is necessary for smooth operation. Mixed powder must not be held in mixer, except under unusual circumstances.

(9) Do not clean bowl or wheels while mixer is in motion.

(10) Examine buggies interior before adding any powder.

(11) It is advisable to use a respirator while shoveling out powder or working over the bowl.

(12) Not more than one N.G. buggy shall be permitted in this house at a time.

(13) The following equipment is allowed in this building while machine is in operation:

Wooden shovels
Wooden hoe and wooden scraper
Floor broom
Whisk brooms on tongs
Aluminum dust pan
Wall thermometer in a case
Oil can
Nitro–cotton scale
Fibre hand scoop
Permissible flash light
Plastic bottles
Rubber mallet
Wooden box for rags and cloth

(14) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on. Before resuming operation, all tools and pieces of equipment shall be accounted for to be certain they do not become a hazard to the operation.

(15) Daily clean–up. Remove all powder and nitrocotton from building and wipe inside of mixer and wheels. Wipe outside of N.G. buggy before returning to neutralizing house. Brush off powder buggies and trucks, and sweep floor thoroughly, sending sweepings to waste shed. Sweep platforms, track and motor rooms.

If mixer is operated more than one shift, the floor shall be thoroughly clean at end of earlier shift, and house left in orderly condition. Motors shall be stopped. Incoming operator shall inspect bowls and equipment before starting motors.

(16) The weekly clean–up shall be established in accordance with safe practices and such clean–up shall be agreed upon by management and the state safety inspector.

(17) Management is held responsible for the strict observance of all the above rules.

(18) See that all fire–fighting equipment is maintained in adequate condition for use at any time.

[Rules C-1 through C-18, filed 3/23/60, effective 8/15/57.]

WAC 296-50-110 Dynamite pack machine house. (1) Man limit – 3 employees, except supervision and truckers, provided that in cases where bag–packing and long length, large diameter cartridges are packed, 4 men shall be the limit.

(2) Before starting machine for the day or after repairs or changes, inspect it thoroughly for foreign material and see that all moving parts are oiled. Inspect inside of hopper, install stirrers and examine tamps. Operate machine empty for a short interval. It is very important that machine be accurately lined up and correctly timed.

(3) If machine is not operating satisfactorily, shut down and notify foreman. If any part of equipment is missing or tools unaccounted for, the machine must be shut down, the foreman called and all powder in the house screened, if the part is not located.

(4) Do not replace a broken shear–pin in drive shaft and restart machine until, (a) the foreman has been notified, (b) the powder has been cleaned from the hopper and sent to the waste opening house for screening and (c) you have assured yourself that machine is in satisfactory operating condition.

(5) Do not tighten tamps while machine is in motion.

(6) Keep floor clean. Remove powder from under front of machine as often as a hazard would indicate. Floor sweepings should be screened and sent to the waste house.

(7) Keep covers on buggies except when shoveling powder out, or filling with cartridged powder.

(8) Check drive to stirrers to see that there is no slippage. If it is slipping, shut down machine and notify foreman at once. Keep stirrer bearing well oiled. Applies to Starrett type of machine.

(9) No spare parts are to be kept in house, fan or motor rooms or in waste shed. Keep in parts house.

(10) The following miscellaneous equipment is allowed in house while machine is in operation:

Wooden or aluminum hoes

Wooden shovels
Wooden or aluminum floor scrapers
Floor brooms
Oil cans
Scale (stick count) chart
Aluminum dust pans on thong
Whisk brooms on thong
Wall thermometer
Wooden tamp on thong

(11) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on. Before resuming operation, all tools and pieces of equipment shall be accounted for to be certain they do not become a hazard to the operation.

(12) Clean-up for machine change or repairs. All powder must be cleaned from the hopper. Clean loose powder from machine and floor and remove all powder, including waste, from the house. When changing stirrers, tamps and nipple plate, it is necessary to clean the hopper thoroughly in addition to doing the above.

For major repairs to house or machine, make clean-up as specified below for weekly clean-up.

No powder shall be delivered to building until machine operator advises that machine is ready for operation.

(13) Remove all waste and cartridged powder from buildings before starting machine clean-up. Clean powder hoppers and stirrers. Clean off all parts of machine and radiators. Remove all dry clean powder recovered to the waste house for screening. Sweep floor thoroughly and send dirty sweepings to waste shed. Leave stirrers out for operators to install on the following operating day. Sweep outside platforms and track. If the house is operated two shifts, at the end of the first shift all powder is put into hopper and worked down to the allowable limit and the floor swept. All waste and sweepings shall be removed.

(14) The weekly clean-up shall be established in accordance with safe practices and such clean-up shall be agreed upon by management and the state safety inspector.

(15) Management is responsible for the enforcement of all of the above rules.

(16) See that all fire-fighting equipment is maintained in adequate condition for use at any time.

[Rules D-1 through D-16, filed 3/23/60, effective 8/15/57.]

WAC 296-50-120 Gelatin mixing house. (1) Man limit – 3 employees, except supervision and truckers.

(2) Lubricate all machinery thoroughly and inspect bowls and stirrers carefully before starting up on each shift, to insure that all equipment is in good operating condition and the bowls are free of foreign material. Where figure eight type of mixer is used, house operator should check clearance of mixer paddles each morning before starting by passing the hand under and around end of paddles to determine if there is satisfactory clearance at these points. Run empty bowls for a short interval and lower and raise paddles.

(3) Dope screens above mixers. These screens shall be inspected daily and before each mixing.

(4) Shut down and notify foreman if machine is not working properly.

(5) Where figure eight mixer is used, stirrers must be locked. Lock wheels on both sides in the "up" position while digging out or dumping powder, and lock wheels on both sides in the "down" position before starting to mix. Removable covers must be in place over the mixing bowls while mixing is in operation.

(6) Floor around bowl shall be swept after each mixing and sweepings stored in a closed container and sent to the waste shed.

(7) Mixing house buggies shall be inspected for foreign material before filling from mixer.

(8) Wooden shovels or scraper should be used to remove powder from stirrers on figure eight mixer.

(9) Mixing bowl temperatures shall not exceed 130°F.

(10) Not more than one N.G. buggy shall be permitted in this house at a time. The buggy shall be removed from the house after emptying.

(11) Do not add any material; use brush or whisk broom on any object within the immediate vicinity of a figure eight mixer while it is in operation; do not take sample from bowl while it is in operation.

(12) Floors to be kept clean. Walls and equipment to be maintained reasonably free of dust.

(13) The following miscellaneous equipment is permitted in this building while machine is in operation:

Wooden or aluminum hoes
Wooden shovels
Wooden or aluminum floor scrapers
Floor brooms
Oil cans
Scale (stick count) chart
Aluminum dust pans on thong
Whisk brooms on thong
Wall thermometer
Wooden tamp on thong

(14) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on. Before resuming operation, all tools and pieces of equipment shall be accounted for to be certain they do not become a hazard to the operation.

(15) Daily clean-up. Clean thoroughly with solvent the inside of bowl and stirrers. Brush off powder buggies and trucks. Wipe outside of N.G. buggy before returning to store house. Brush down outside of bowls. Sweep floors, platforms, track and motor rooms. Send all sweepings to waste shed. It is recommended that goggles be used in clean-up operations.

If mixer is operated more than one shift, the floor shall be swept thoroughly at end of earlier shift and house left in orderly condition. Motors shall be stopped and electric switches disconnected. Incoming operator shall inspect bowls and equipment before starting motors.

(16) The weekly clean-up shall be established in accordance with safe practices and such clean-up shall be

agreed upon by management and the state safety inspector.

(17) The management is held responsible for the strict observance of all of the above rules.

[Rules E-1 through E-17, filed 3/23/60, effective 8/15/57.]

WAC 296-50-130 Gelatin cartridge machine house. (1) Man limit – 3 employees, except supervision and truckers.

(2) Before starting machine for the day or after repairs or changes, inspect carefully to see that machine is well oiled and bowl is free of foreign material. For Starrett Stuffer type of machine, check rigidity of worms. Operate machinery empty for a short interval.

(3) If machine is not operating satisfactorily, shut down and notify foreman. Do not attempt to run powder which is too stiff.

(4) If any part of equipment is missing or tool unaccounted for, the machine must be shut down and the foreman called. Do not start it again until missing material is found or inspection of machine and powder has shown it safe to resume operations.

(5) When feeding powder into bowl, care should be exercised in keeping the hands well out of the bowl and away from worm to avoid injury.

(6) Clean tables and floor frequently, storing waste in closed containers for removal to waste shed.

(7) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on. If removed string nipple plate nuts on a thong or aluminum wire and immerse in engine oil until plate is again assembled.

(8) Keep no spare parts in house, fan or motor houses or waste shed. Keep only in parts house.

(9) No tools are permitted in this building while the machine is running. The following miscellaneous equipment is allowed in house while machine is in operation:

Wooden shovel
Scale
Cartridge chart
Aluminum dust pan on thong
Floor brooms
Whisk brooms and counter brushes on thong
Oil can
Floor scraper
Wall thermometer
Brass screwdriver on counter-weight
Hand scraper

(10) On Starrett Stuffer machine make certain that auger is secured in threaded coupling before starting machine. Always check to see that machine is operating in proper direction so that auger will not screw out.

(11) Where Starrett Stuffer machine is used, make sure that auger, when out of place, has ample clearance between liner and check clearance between nipple plate by turning machine by hand after nipple plate is assembled.

(12) On Starrett Stuffer, always use a gasket which has been freshly lubricated with oil between nipple plate and bowl. Oil resistant synthetic rubber is preferable.

(13) All tools shall be handled carefully and oil desensitizer used liberally on the parts being worked on. Before resuming operation, all tools and pieces of equipment shall be accounted for to be certain they do not become a hazard to the operation.

(14) Daily clean-up. Remove all punched and unpunched powder from the house and cut off power to machine motor before starting the machine clean-up. Remove and clean the nipple plate and horizontal auger. Wipe inside and outside of bowl, vertical worms and inside of lower worm housing as well as possible with rags and solvent. Leave nipple off until start of next shift. Clean crimper and leave crimper head in oil overnight. Clean floor and table carefully and wipe with solvent if necessary. Send sweepings to waste shed.

(15) The weekly clean-up shall be established in accordance with safe practices and such clean-up shall be agreed upon by management and the state safety inspector.

(16) The management is responsible for the enforcement of the above rules.

(17) See that all fire-fighting equipment is maintained in adequate condition for use at any time.

[Rules F-1 through F-17, filed 3/23/60, effective 8/15/57.]

WAC 296-50-140 Handpack house. (1) Man limit – 3 employees, except supervision and truckers.

(2) Keep powder in buggies covered as much as possible.

(3) Keep floor and benches clean. Store sweepings in covered container and send to waste shed frequently.

(4) Spare equipment shall be stored in spare parts house. No parts shall be stored in waste shed, fan or motor rooms.

(5) The following miscellaneous equipment is allowed in this building:

Wooden shovels
Wooden or aluminum hoes
Wooden tamps
Whisk brooms on thong
Wooden or aluminum floor scrapers
Scale (stick count) chart
Aluminum hand scoops
Floor brooms

(6) At end of day, remove powder from building, clean equipment and sweep floors, platforms and track thoroughly.

(7) The management is responsible for the enforcement of the above rules.

(8) See that all fire-fighting equipment is maintained in adequate condition for use at any time.

[Rules G-1 through G-8, filed 3/23/60, effective 8/15/57.]

WAC 296-50-150 Waste opening house. (1) Man limit – 3 employees, except supervision and truckers.

(2) Hardwood wedges and rubber mallets shall be used to open wooden cases.

(3) Open cartridges with short knife or wooden spatula attached to long rawhide thong or opening boards.

(4) Inspect screens before use and often during the day. Clean and deliver to repairman immediately any screen found to be defective.

(5) Screen all dynamite grades, except semi-gel, by brushing through the screen. Semi-gel may be opened and rolled with an all wood rolling pin on a table to facilitate inspection for foreign material, Semi-gel may also be screened. Gelatin grades shall be unrolled and inspected.

(6) Under normal conditions full size cartridges or large pieces of powder should not be sent to the burning ground but should be cut or broken into small pieces before delivery to waste shed.

(7) The following miscellaneous equipment is allowed in this building during opening operations:

Solid knives on thongs (or a cutting bench)
Wooden shovels
Wooden spatulas on thongs
Powder screens
Wooden floor scraper
Scale
Floor brooms
Whisk brooms on thong and aluminum scoop
Counter brush on thong
Brass picks on thong
Wall thermometer

(8) House shall be kept orderly and be cleaned thoroughly at end of shift.

(9) The management is held responsible for the strict observance of the above rules.

(10) See that all fire-fighting equipment is maintained in adequate condition for use at any time.

[Rules H-1 through H-10, filed 3/23/60, effective 8/15/57.]

WAC 296-50-160 Box packing house. (1) Man limit - 6 employees, except supervision and truckers.

(2) Paraffin temperature in the dip pot must not exceed 220 degrees F.

(3) Machines in this house shall be kept clean and the bearings oiled.

(4) No explosives in excess of the normal house limit shall be allowed to remain in building overnight.

(5) Do not handle cases roughly.

(6) Inspect cases carefully and remove all protruding nails.

(7) Keep floor swept and loose nails cleaned up.

(8) The following tools and miscellaneous equipment are permitted in this house:

1 Pair pliers
1 Screwdriver
1 Crescent or end wrench for nailing
1 Box scraper
1 Wire cutter
1 Butcher knife
Scales
Paraffin transfer tube
1 Floor scraper, aluminum
1 Metal-clad thermometer on thong
1 Oil can
1 Set stencils with brush and pot
2 Test weights - 25 lbs. and 50 lbs.
Box lining forms
2 Floor brooms
2 Aluminum dust pans
Or other necessary items

(9) Daily clean-up. Clean nailing machine, roller conveyor, scales and radiators each evening with appropriate tools. Scrape and sweep floor. Shut off steam in paraffin heater kettle. Remove and clean dip tank screen. Remove sludge from the dip tank, mix with sawdust and transfer to waste shed. (At plants where paraffin is pumped to dip tank, leave tank empty overnight and noon.) Sweep platforms, track and magazine cars. Clean powder buggies and replace paper in bottom. If house is operated more than one shift, the floors shall be thoroughly cleaned at end of each shift.

(10) The management is responsible for the strict observance of all the above rules.

[Rules I-1 through I-10, filed 3/23/60, effective 8/15/57.]

WAC 296-50-170 Powder repair shop. (1) This building is classed as an explosive building and general rules for powder apply here. Approved shoes and uniforms are required.

(2) No powder shall be brought into this building at any time.

(3) All parts shall be thoroughly cleaned of powder.

(4) Extreme care shall be taken in making repairs to any equipment having been in contact with dynamite or N.G. Careful inspection shall be made of all wooden parts before starting repairs. If they appear to be saturated with N.G., they shall be discarded and taken to the burning ground.

(5) Use engine oil liberally on tools being used and parts being repaired.

(6) Never make any repairs to a danger building or adjacent equipment while such is in operation and until you are familiar with the special rules applying to that operation.

(7) All tools, metallic parts and spare parts shall be checked into and out of explosive building before and after making repairs. Inspect thoroughly all repaired equipment before removal from this shop to operating building and spare parts storage.

(8) Keep benches clean and orderly and sweep floor often enough to keep clean.

(9) The responsibility for the observance of the above rules rests with the management.

[Rules J-1 through J-9, filed 3/23/60, effective 8/15/57.]

WAC 296-50-180 Batch nitrator. (1) Every nitrator shall be provided with an auxiliary power unit capable of safely disposing of N.G. in process in the event of a power failure.

(2) Employees shall be limited to three excluding supervision.

(3) The nitrator temperature must never exceed 50°F. The charge should not be dropped at a temperature

lower than 32°F. (34°F. in winter) as received in the separator except for regular N.G. (100% glycerin), which should not drop below 40°F. to prevent freezing.

(4) Nitrator operator shall give his undivided attention to a charge being nitrated and when drawing charge from nitrator to separator.

(5) Nitrator charge, N.G., or waste acid shall never be sent to the next operation until proper notification has been received that the store-house is ready to receive the charge.

(6) Open, wash, and inspect nitrator interior every 3 months.

[Rules K-1 through K-6, filed 3/23/60, effective 8/15/57.]

WAC 296-50-190 Separator and prewash operation. (1) No prewash or soda water shall be heated above 140°F.

(2) N.G. gutter to neutralizers must be sponged at the end of shift.

(3) All sponges must be kept in weak soda water.

(4) Rubber gloves must be worn when washing gutter and equipment.

(5) Gutters should be painted as often as necessary to maintain them in good condition.

(6) When painting tank interiors, a life belt and a gas mask (or air line respirator) shall be worn. Two attendants must be present while a man is in tank.

(7) Daily clean-up. Clean house and all equipment at end of day and oil lead work when necessary. Remove, wash and leave out overnight the glycerin distributor. Check glycerin screen. Open drain on waste acid blow case and leave open overnight. Examine all tanks and catch boxes for slums and clean if any are present.

(8) Weekly clean-up. Clean and inspect all equipment, water drains, ditch, etc. Paint catch boxes and gutters if needed. Clean glycerin heater house.

(9) Periodic clean-up. Test air and steam accumulators (monthly). Empty and clean large drowners. Clean glycerin scale tanks. At least biennially examine interior of all acid blow cases.

(10) The management is held responsible for the enforcement of all these rules.

[Rules K-7 through K-16, filed 3/23/60, effective 8/15/57.]

WAC 296-50-200 N.G. neutralizing house and store house. (1) Man limit - 2 employees, except supervision.

(2) Start ventilator fan and wait a few minutes before entering house.

(3) Inspect all rubber hoses on tanks and buggies daily for any signs of leakage. Replace all hose where any sign of deterioration exists.

(4) Carrying of N.G. in buckets shall be avoided as much as possible.

(5) In case of N.G. spill, sponge up N.G. into a bucket and put in catch box, wipe thoroughly with sponge and soda ash solution and clean thoroughly with N.G. Remover. Report spills to management at once.

(6) N.G. sponges must be kept in weak soda solution when not in use, and wiping rags must be kept in closed container.

(7) Sweep up or mop floor and keep house clean and tidy at all times.

(8) Wash N.G. buggies at end of day. Always leave fresh or weak soda water in N.G. buggy tanks overnight.

(9) At the end of each week the catch boxes and all equipment not containing N.G. in storage must be emptied of water and thoroughly scrubbed out and refilled with fresh water.

(10) The following is the only miscellaneous equipment allowed in this building except when it is being cleaned for repairs:

Rubber buckets
Sample carrier
Hose
Plastic or rubber covered scale
Weights and balance
Clock in box
Lead pan for sample bottles
Blue litmus paper
2 brooms
Tank markers
Brom phenol blue solution
Thermometers
Hydrometers
Rubber covered flashlight on thong for wrist
Rubber dipper
2 dust pans

[Rules L-1 through L-10, filed 3/23/60, effective 8/15/57.]

WAC 296-50-210 Acid operations. (1) The greatest care must be observed in the handling and transportation of acids. Avoid doing things which will cause splashing.

(2) Wash acid or ammonia burns with great quantities of water over a long period of time, then report to hospital.

(3) Every employee working with acids should know the location of and how to operate the safety showers. Test them every shift and do not permit obstructions in front of them. If shower is not nearby, have bucket of water at hand for use in case of acid burns when making repairs or when operation is being carried on.

(4) Use water from drinking fountain to wash acid out of eye or use the eye cup and solution provided for this purpose. Report any accident immediately to foreman, supervisor or hospital.

(5) Nitrous fumes: Breathing of nitrous fumes is to be avoided and any man who has inhaled sufficient to cause even slight irritation should cease work immediately and report to the foreman and proceed to the plant hospital at once. He should not exert himself after exposure to the fumes because complete rest is the best first-aid treatment to prevent serious complications. Men exposed to red fumes, even though they do not produce coughing, must follow the above rule. When it is absolutely necessary to enter an area laden with these fumes, a gas mask must be worn.

(6) Know the location and use of the gas masks for acid and ammonia fumes and use them when fumes are

strong. Return any mask that has been used to laboratory for inspection and repairs.

(7) Glasses shall be worn by all employees in acid area at all times except when performing duties requiring goggles. Approved type acid goggles must be worn whenever acid or ammonia is outside, or may get out of, its normal pipe line or tank. This includes taking samples, working on valves, gaskets or pumps, measuring tanks, or carrying on any work where acid or ammonia might reasonably be expected to come in contact with the eyes.

(8) Under especially hazardous conditions, a rubber suit and helmet must be worn.

(9) Employees should wear proper clothing and "safety" shoes. Hats with brims must be worn around operations for protection against drips from overhead lines and equipment. Rubber gloves should be worn when sampling acid and handling equipment contaminated with acid and anhydrous ammonia.

(10) All ladders other than step-ladders or special ladders must be equipped with spiked feet or other approved friction feet. When used on concrete or smooth floors, plants must be placed under the spiked feet and the ladder must be securely fastened to prevent slipping. If this cannot be done, another man must hold the ladder.

(11) Repair work on acid equipment must not be started unless water is at hand. Whenever possible, acid equipment should be washed off thoroughly with fresh water before repairs are started.

(12) Before opening a line for repairs, be certain that the line is drained, all valves are closed and locked, and motors or pumps which deliver acid through the lines are locked out. Remove blanks, valve tags and motor locks when work is completed.

(13) When braking flanges in a pipe line, or removing a flange from a vessel, make sure there is no pressure on the line or vessel. Do not take all bolts out. At least two nuts must remain on two bolts in a loosened condition until the joint is broken and possible pressure released. Stand away from the flange when actually breaking the line so that if acid spurts out it will not come in contact with you.

(14) Observe the following rules before entering any acid tank: (a) Disconnect and blank off all connections, (b) wash and neutralize interior, (c) obtain permission to enter from foreman or supervisor who has inspected the tank and seen that all precautions and preparations have been made, (d) be equipped with protective clothing, goggles, gas masks, if necessary, and safety harness with line attached. Two men shall be in attendance outside tank to render assistance, if required.

(15) Always wear a gas mask when entering a brick-line tank which has been used for acid.

(16) Acid samples must be conveyed in suitable carriers and rubber gloves must be worn while taking samples.

(17) It is recommended that safety shields be in place around bonnets of valves, pipe flanges and over pumps at all times. Tighten bolts on valves and pumps frequently, and repack when necessary.

(18) Report to your foreman or supervisor at once any unsafe condition or any apparatus which is leaking acid or seems likely to become leaky. Block off entire area whenever there is an acid leak.

(19) Do not use a carbon tetrachloride fire extinguisher where it may come in contact with acid. Carbon tetrachloride and acid react to form phosgene, a poisonous gas.

[Rules M-1 through M-19, filed 3/23/60, effective 8/15/57.]

WAC 296-50-220 Spare parts houses. (1) No powder is to be brought into this building at any time.

(2) All powder is to be cleaned from spare parts before delivering to storage.

(3) Floors, benches, and racks shall be kept clean and in order.

(4) The following rules govern the cleaning of powder machine equipment for storage:

Parts are to be cleaned of all powder as they are removed from the machine unless special cleaning facilities are provided elsewhere.

[Rules N-1 through N-4, filed 3/23/60, effective 8/15/57.]

WAC 296-50-230 Nitrocotton screening and drying houses. (1) Matches, torches, or other flame-producing devices are strictly prohibited in nitrocotton areas. Only nonsparking tools are permitted.

(2) The walls and floor of nitrocotton dryer building and screening building when in regular use should be washed or brushed down each week.

Hoops and nuts on nitrocotton barrels or containers must be wet with water prior to removing them and prior to placing them back on the containers, also the socket wrench used for this purpose must be wet with water.

(3) Extreme cleanliness must be maintained in all nitrocotton operations. Waste or dirty nitrocotton should never be mixed with other refuse or waste material.

(4) Dry nitrocotton is extremely hazardous and after cotton has been dried, extraordinary precautions must be observed in handling.

(5) Do not store nitrocotton in open containers.

(6) Employees whose clothing may contain or be covered with nitrocotton must not answer fire alarms, assist in fighting fires or leave plant until clothing has been changed.

(7) Under no condition is frozen nitrocotton to be opened and handled. It must be thawed before removing from drums and screening.

(8) Steel drums shall be opened outside, or at least in a place removed from the screening operation.

(9) The nitrocotton shall be taken from the drums by means of wooden tools or a fibre scoop, or brass cotton fork.

(10) All wet nitrocotton shall be screened before delivery to the drying and mixing houses.

(11) Dry nitrocotton containing less than 5% moisture shall never be screened.

(12) The drums, when emptied, must be thoroughly cleaned of all nitrocotton, both inside and out.

(13) Partially filled drums of unused nitrocotton shall be removed from screen room and carefully closed to prevent evaporation of moisture, taking the precaution of wetting clamp and drum before closing.

(14) Screened nitrocotton shall be placed in covered fibre cans, or aluminum barrels, or paper bags.

(15) The amount of nitrocotton in the screening house shall be held to a minimum and never exceed the posted limit.

(16) The screening house must be clean at all times.

(17) The following miscellaneous equipment is stored outside, in a cabinet, for opening drums before taking them into the building:

2 Brass socket wrenches on thong
1 Brass end wrench on thong
1 Wooden wedge
1 Rubber mallet

(18) Only screened nitrocotton shall be placed on the dryer.

(19) Wooden boxes, fibre cans and aluminum barrels are the only containers that may be taken into the dryer.

(20) Do not allow air temperature to exceed 135°F.

(21) Operators and visitors are not permitted to wear rubber soled shoes or overshoes in dry house.

(22) Care should be used in discharging dryer to keep friction to a minimum.

(23) Check ground connections from supporting screen under cloth.

(24) The miscellaneous equipment permitted in this house is a wooden hoe, a wooden shovel, and broom.

(25) Clean-up. The floors shall be kept clean at all times. The walls, ceilings, floors, and air ducts from the blower shall be washed at frequent intervals to prevent an accumulation.

(26) The management is held responsible for the observance of the above rules.

(27) See that all fire-fighting equipment is maintained in adequate condition for use at any time.

[Rules O-1 through O-27, filed 3/23/60, effective 8/15/57.]

Chapter 296-52 WAC
SAFETY STANDARDS FOR THE POSSESSION AND HANDLING OF EXPLOSIVES

WAC

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296-52-010 Introduction. [Statutory Authority: Chapters 42.30 and 43.22 RCW, RCW 49.17.040, 49.17.050 and 49-.17.240. 78-07-052 (Order 78-10), § 296-52-010, filed 6/28/78; Order 70-4, § 296-52-010, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-012 Incorporation of standards of national organizations and federal agencies. [Order 75-41, § 296-52-012, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-52-020 Purpose. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-020, filed 12/24/81; Order 70-4, § 296-52-020, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-025 Variance and procedure. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-025, filed 12/24/81; Order 75-41, § 296-52-025, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-027 Equipment approval by nonstate agency or organization. [Order 75-41, § 296-52-027, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-030 Definitions. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-030, filed 12/11/84; 81-07-048 (Order 81-4), § 296-52-030, filed 3/17/81; Order 75-41, § 296-52-030, filed 12/19/75; Order 70-4, § 296-52-030, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-040 User's (blaster's) license. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-040, filed 12/11/84; 82-02-003 (Order 81-32), § 296-52-040, filed 12/24/81; Order 70-4, § 296-52-040, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-043 Use of explosives and blasting agents. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022

(Order 84-24), § 296-52-043, filed 12/11/84; 82-08-026 (Order 82-10), § 296-52-043, filed 3/30/82; 81-07-048 (Order 81-4), § 296-52-043, filed 3/17/81; Order 76-6, § 296-52-043, filed 3/1/76; Order 75-41, § 296-52-043, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-050 Transportation. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-050, filed 12/24/81; 81-07-048 (Order 81-4), § 296-52-050, filed 3/17/81; Order 75-41, § 296-52-050, filed 12/19/75; Order 70-4, § 296-52-050, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-060 More stringent ordinances prevail. [Order 70-4, § 296-52-060, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-080 Temporary permit for existing storage facilities. [Order 70-4, § 296-52-080, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-090 Construction of magazines. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-090, filed 12/11/84; 82-08-026 (Order 82-10), § 296-52-090, filed 3/30/82; 81-07-048 (Order 81-4), § 296-52-090, filed 3/17/81; Order 75-41, § 296-52-090, filed 12/19/75; Order 70-4, § 296-52-090, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-095 Storage of explosives. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-095, filed 12/11/84; 81-07-048 (Order 81-4), § 296-52-095, filed 3/17/81; Order 75-41, § 296-52-095, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-100 Quantity and distance tables for storage. [Order 75-41, § 296-52-100, filed 12/19/75; Order 70-4, § 296-52-100, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-110 Limit on storage quantity. [Order 70-4, § 296-52-110, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-120 Quantity and distance tables for factory buildings. [Order 70-4, § 296-52-120, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-140 Quantity and distance table for separation between magazines. [Order 75-41, § 296-52-140, filed 12/19/75; Order 70-4, § 296-52-140, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-150 Storage of blasting caps with other explosives prohibited. [Statutory Authority: RCW 49.17.040 and 49-.17.050. 82-02-003 (Order 81-32), § 296-52-150, filed 12/24/81; Order 70-4, § 296-52-150, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-160 License for manufacturing. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-160, filed 12/11/84; Order 70-4, § 296-52-160, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-165 Blasting agents. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-165, filed 12/24/81; Order 76-6, § 296-52-165, filed 3/1/76; Order 75-41, § 296-52-165, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-167 Water gel (slurry) explosives and blasting agents. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-167, filed 12/24/81; Order 75-41, § 296-52-167, filed 12/19/75.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-170 Storage magazine license. [Order 70-4, § 296-52-170, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-180 Storage magazine license fees. [Order 70-4, § 296-52-180, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-190 Dealer's license. [Order 76-6, § 296-52-190, filed 3/1/76; Order 70-4, § 296-52-190, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-200 Annual inspection. [Order 70-4, § 296-52-200, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-220 Purchaser's license. [Order 70-4, § 296-52-220, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-230 Unlawful access to explosives. [Order 70-4, § 296-52-230, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-260 Coal mining code unaffected. [Order 70-4, § 296-52-260, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-270 Shipments out-of-state. [Order 70-4, § 296-52-270, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-330 Explosives containers to be marked—Penalty. [Order 70-4, § 296-52-330, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-350 Small arms ammunition, primers, and propellants—Transportation regulations. [Order 70-4, § 296-52-350, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-360 Small arms ammunition, primers, and propellants—Separation from flammable materials. [Order 70-4, § 296-52-360, filed 4/29/70.] Repealed by 86-10-4 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-370 Small arms ammunition, primers, and propellants—Smokeless propellants and black powder, transportation, storage and display requirements. [Order 76-6, § 296-52-370, filed 3/1/76; Order 70-4, § 296-52-370, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49-.17.040 and 49.17.050.

296-52-380 Small arms ammunition, primers, and propellants—Small arms ammunition primers, transportation, storage, and display requirements. [Order 76-6, § 296-52-380, filed 3/1/76; Order 70-4, § 296-52-380, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17-.040 and 49.17.050.

296-52-390 Storage of ammonium nitrate. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-390, filed 12/24/81; Order 76-6, § 296-52-390, filed 3/1/76; Order 75-41, § 296-52-390, filed 12/19/75; Order 70-4, § 296-52-390, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24),

filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-400 Enforcement. [Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-52-400, filed 12/11/84; Order 70-4, § 296-52-400, filed 4/29/70.] Repealed by 86-10-044 (Order 86-24), filed 5/6/86. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9001 Appendix Figure 1—Application for user's (blaster's) license. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9001, filed 12/24/81; Order 75-41, Appendix Figure 1 (codified as WAC 296-52-9001), filed 12/19/75; Order 70-4, Appendix Figure 1, filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9002 Appendix Figure 2—Request for inspection. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9002, filed 12/24/81; Order 70-4, Appendix Figure 2 (codified as WAC 296-52-9002), filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9003 Appendix Figure 3—Application for license to manufacture explosives. [Statutory Authority: RCW 49-.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9003, filed 12/24/81; Order 70-4, Appendix Figure 3 (codified as WAC 296-52-9003), filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9004 Appendix Figure 4—Application for license to operate a storage magazine for explosives. [Order 75-41, Appendix Figure 4 (codified as WAC 296-52-9004), filed 12/19/75; Order 70-4, Appendix Figure 4, filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9005 Appendix Figure 5—Application for dealer's license. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9005, filed 12/24/81; Order 70-4, Appendix Figure 5 (codified as WAC 296-52-9005), filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9006 Appendix Figure 6—Application for license to purchase explosives. [Statutory Authority: RCW 49.17-.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9006, filed 12/24/81; Order 75-41, Appendix Figure 6 (codified as WAC 296-52-9006), filed 12/19/75; Order 70-4, Appendix Figure 6, filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

296-52-9007 Appendix Figure 7—Dealer's record. [Statutory Authority: RCW 49.17.040 and 49.17.050. 82-02-003 (Order 81-32), § 296-52-9007, filed 12/24/81; Order 70-4, Appendix Figure 7 (codified as WAC 296-52-9007), filed 4/29/70.] Repealed by 85-01-022 (Order 84-24), filed 12/11/84. Statutory Authority: RCW 49.17.040 and 49.17.050.

PART A--GENERAL

WAC 296-52-401 Scope and application. The subject code shall apply to all persons in the state of Washington and shall be known as the "Safety standards for the possession and handling of explosives," hereinafter called the "explosives code." The department of labor and industries, through the division of industrial safety and health, shall enforce the entire code, particularly all items affecting persons covered under Title 51 RCW, the transportation and storage of explosives not exempted under RCW 70.74.191, and the licensing required under this code.

Other law enforcement agencies, city, municipal, county, Washington state, other states and federal are obliged, under their own laws, codes, and ordinances, to enforce specific aspects of the possession and handling of explosives (RCW 70.74.201).

The division of industrial safety and health shall cooperate with all other law enforcement agencies in carrying out the intent of the explosives code and the Explosives Act.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-401, filed 5/6/86.]

WAC 296-52-405 Incorporation of standards of national organizations and federal agencies. (1) Whenever a provision of this chapter incorporates by reference a national code or portion thereof which has been adopted by and is currently administered by another state agency, compliance with those provisions adopted and administered by such other state agency, if from a more recent edition of such national code, will be deemed to be prima facie evidence of compliance with the provisions of this chapter.

(2) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations (CFR) or any other regulations adopted by an agency of the federal government, that provision of this chapter shall be construed to mean that compliance with such regulations shall be prima facie evidence of compliance with the provisions of this chapter.

(3) Whenever a provision of this chapter incorporates therein provisions of the Code of Federal Regulations, the provisions so incorporated shall be those in effect on the date of effectiveness of this chapter, unless the content of the incorporating section specifies otherwise.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-405, filed 5/6/86.]

WAC 296-52-409 Variance and procedure. Realizing that conditions may exist in operations under which certain state standards will not have practical application, the director of the department of labor and industries or his authorized representative may, pursuant to this section, RCW 49.17.080 and/or 49.17.090 and appropriate administrative rules of this state and the department of labor and industries and upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when other means of providing an equivalent measure of protection are afforded. Such variation granted shall be limited to the particular case or cases covered in the application for variance and may be revoked for cause. The permit for variance shall be conspicuously posted on the premises and shall remain posted during the time it is in effect. All requests for variances from safety and health standards included in this or any other chapter of Title 296 WAC, shall be made in writing to the director of the department of labor and industries at Olympia, Washington, or his duly authorized representative, the assistant director, division of industrial safety and

health, department of labor and industries, Olympia, Washington. Variance application forms may be obtained from the department upon request.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-409, filed 5/6/86.]

WAC 296-52-413 Equipment approval by nonstate agency or organization. Whenever a provision of this chapter states that only that equipment or those processes approved by an agency or organization other than the department of labor and industries, such as the Underwriters Laboratories or the Bureau of Mines, shall be construed to mean that approval of such equipment or process by the designated agency or group shall be prima facie evidence of compliance with the provision of this chapter.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-413, filed 5/6/86.]

WAC 296-52-417 Definitions. Definitions as used in this chapter, unless a different meaning is plainly required by the context:

(1) "Attend" means the physical presence of an authorized person within the field of vision of explosives. The said attendant shall be awake, alert and not engaged in activities which may divert his attention so that in case of an emergency he can get to the explosives quickly and without interference, except for brief periods of necessary absence, during which absence simple theft of explosives is not ordinarily possible.

(2) "Authorized," "approved" or "approval" means authorized, approved, or approval by the department of labor and industries or other approving agency or individual as specified by the provisions of this chapter.

(3) "Barricaded" means the effective screening of a building containing explosives from a magazine or other building, railway, or highway by a natural or an artificial barrier. A straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine or other building or to a point twelve feet above the center of a railway or highway shall pass through such barrier.

(4) "Blast area" means the area of a blast within the influence of flying rock missiles, gases, and concussion.

(5) "Blast pattern" means the plan of the drill holes laid out on a bench; an expression of the burden distance and the spacing distance and their relationship to each other.

(6) "Blast site" means the area where explosive material is handled during loading, including the perimeter of blast holes and 50 feet in all directions from loaded holes or holes to be loaded. In underground mines 15 feet of solid rib or pillar can be substituted for the 50 foot distance.

(7) "Blaster" means that qualified person in charge of and responsible for the loading and firing of a blast.

(8) "Blasting agent" means any material or mixture consisting of a fuel and oxidizer, intended for blasting, not otherwise classified as an explosive, and in which none of the ingredients are classified as an explosive, provided that the finished product, as mixed and packaged for use or shipment, cannot be detonated when unconfined by means of a No. 8 test blasting cap.

(9) "Day box" means a box which is not approved as a magazine for unattended storage of explosives. Such box may be used for storage of explosives during working hours on a job site, provided that it shall always be guarded against theft, particularly in inhabited areas, and shall be attended or locked and secured against outright lifting, as the risk demands. Caps shall be safely separated from other explosives. Such day boxes shall be marked with the word "explosives."

(10) "Dealer" means any person who purchases explosives or blasting agents for the sole purpose of resale, and not for use or consumption.

(11) "Department" means the department of labor and industries.

(12) "Detonating cord" means a round, flexible cord containing a center core of high explosive and used to initiate other explosives.

(13) "Detonator" means any device containing any initiating or primary explosive that is used for initiating detonation. The term includes, but is not limited to, electric blasting caps of instantaneous and delay types, blasting caps for use with safety fuses, detonating cord delay connectors, and nonelectric instantaneous and delay blasting caps which use detonating cord, shock tube, or any other replacement for electric leg wires.

(14) "Director" means the director of the department of labor and industries, or his designated representative.

(15) "Division" means the division of industrial safety and health of the department.

(16) "Efficient artificial barricade" means an artificial mound or properly revetted wall of earth of a minimum thickness of not less than three feet or such other artificial barricade as approved by the department of labor and industries.

(17) "Explosive" or "explosives" whenever used in this chapter means any chemical compound or mechanical mixture that is commonly used or intended for the purpose of producing an explosion, that contains any oxidizing and combustible units, or other ingredients, in such proportions, quantities or packing, that an ignition by fire, by friction, by concussion, by percussion, or by detonation of any part of the compound or mixture may cause such a sudden generation of highly heated gases that the resultant gaseous pressures are capable of producing destructive effects on contiguous objects or of destroying life or limb. In addition, the term "explosives" shall include all material which is classified as Class A, Class B, and Class C explosives by the federal Department of Transportation: *Provided*, That for the purposes of this chapter small arms ammunition, small arms ammunition primers, smokeless powder not exceeding fifty pounds, and black powder not exceeding five pounds shall not be defined as explosives: *Provided*, That such black powder is intended to be used solely for sporting, recreational, or cultural purposes in antique firearms. Classification of explosives shall include but not be limited to the following:

Note: Classification of explosives is described by the U.S. Department of Transportation as follows (see 49 CFR, Parts 100–199) (1984):

(a) Class A explosives: (Possessing detonating hazard) dynamite, nitroglycerin, picric acid, lead azide, fulminate of mercury, black powder exceeding five pounds, blasting caps in quantities of 1001 or more, and detonating primers.
(b) Class B explosives: (Possessing flammable hazard) propellant explosives, including smokeless propellants exceeding fifty pounds.
(c) Class C explosives: (Including certain types of manufactured articles which contain Class A or Class B explosives, or both, as components but in restricted quantities) blasting caps in quantities of 1000 or less.

(18) "Explosive–actuated power devices" means any tool or special mechanized device which is actuated by explosives, but not to include propellant–actuated power devices.

(19) "Explosives manufacturing building" means any building or other structure (excepting magazines) containing explosives, in which the manufacture of explosives, or any processing involving explosives, is carried on, and any building where explosives are used as a component part or ingredient in the manufacture of any article or device.

(20) "Explosives manufacturing plant" means all lands, with the buildings situated thereon, used in connection with the manufacturing or processing of explosives or in which any process involving explosives is carried on, or the storage of explosives thereat, as well as any premises where explosives are used as a component part or ingredient in the manufacture of any article or device.

(21) "Factory building" means the same as "manufacturing building."

(22) "Forbidden or not acceptable explosives" means explosives which are forbidden or not acceptable for transportation by common carriers by rail freight, rail express, highway, or water in accordance with the regulations of the federal Department of Transportation.

(23) "Fuel" means a substance which may react with oxygen to produce combustion.

(24) "Fuse cap (fuse detonator)" means a detonator which is initiated by a safety fuse; also referred to as an ordinary blasting cap.

(25) "Fuse (safety)" means a flexible cord containing an internal burning medium by which fire or flame is conveyed at a continuous and uniform rate from the point of ignition to the point of use, usually a fuse detonator.

(26) "Handler" means any person/individual who handles explosives for purposes of transporting, moving, or assisting a licensed user (blaster) in loading, firing, blasting, or disposing of explosives and blasting agents. This does not include employees of a licensed manufacturer engaged in manufacturing process, drivers of common carriers or contract haulers.

(27) "Handloader" means any person who engages in the noncommercial assembling of small arms ammunition for his own use, specifically the operation of installing new primers, powder, and projectiles into cartridge cases.

(28) "Handloader components" means small arms ammunition, small arms ammunition primers, smokeless powder not exceeding fifty pounds, and black powder as used in muzzle loading firearms not exceeding five pounds.

(29) "Highway" means any public street, public alley, or public road.

(30) "Inhabited building" means only a building regularly occupied in whole or in part as a habitation for human beings, or any church, schoolhouse, railroad station, store, or other building where people are accustomed to assemble, other than any building or structure occupied in connection with the manufacture, transportation, storage, or use of explosives.

The magazine for indoor storage is not required to be a cubic yard in size as long as it is constructed as stated in WAC 296–52–090(3).

The interpretation of an uninhabited building as defined by the "Bureau of Alcohol, Tobacco, and Firearms" Department of the Treasury, which is the federal regulatory agency of explosives, allows 50 pounds of high explosives or 5,000 caps in a warehouse, wholesale, or retail establishments. It also states: "No indoor facilities for storage of high explosive shall be located in a residence or dwelling."

We only allow 1,000 caps, which is computed to 1–1/2 pounds of explosives and is much less than the Bureau of Alcohol, Tobacco, and Firearms allows. Therefore, the department will allow indoor storage to include shops and maintenance buildings.

(31) "Magazine" means any building, structure or container, other than an explosive manufacturing building, approved for the storage of explosive materials.

(32) "Manufacturer" means any person engaged in the business of manufacturing explosive materials for purposes of sale, distribution, or use.

(33) "Motor vehicle" means any self–propelled automobile, truck, tractor, semitrailer or full trailer, or other conveyance used for the transportation of freight.

(34) "Mudcap" means covering the required number of cartridges that have been laid on top of a boulder with a three or four inch layer of mud (free from rocks or other material which might constitute a missile hazard). Mudcapping is also commonly known as "bulldozing" and "dobying."

(35) "Natural barricade" means any natural hill, mound, wall, or barrier composed of earth or rock or other solid material of a minimum thickness of not less than three feet.

(36) "Oxidizer" means a substance that yields oxygen readily to stimulate the combustion of organic matter or other fuel.

(37) "Permanent magazines" means magazines that are permanently fastened to a foundation and that are left unattended. The capacity of said permanent magazines shall not exceed the limits stated in RCW 70.74-.040. Permanent magazines shall be approved and licensed.

(38) "Person" means any individual, firm, copartnership, corporation, company, association, joint stock association, and including any trustee, receiver, assignee, or personal representative thereof.

(39) "Person responsible," for an explosives magazine, means the legal person who actually operates the magazine and who is responsible for the proper storage, protection and removal of the explosives. The responsible person may be the owner or the lessee or the authorized operator of the magazine.

(40) "Portable magazines" also called "field" magazines means magazines that are designed to be unattended and that are not permanently fastened to a foundation. Said magazines shall be so constructed or secured that they can not be readily lifted and carried away by unauthorized persons. The capacity of said portable magazines shall be limited to the amount of explosives required for efficient operation. Portable magazines shall be approved and licensed.

(41) "Possess" means the physical possession of explosives in one's hand, vehicle, magazine or building.

(42) "Primer" means a unit, package, cartridge, or explosive used to initiate other explosives or blasting agents.

(43) "Propellant-actuated power device" means any tool or special mechanized device or gas generator system which is actuated by a propellant or which releases and directs work through a propellant charge.

(44) "Public conveyance" means any railroad car, streetcar, ferry, cab, bus, airplane, or other vehicle which is carrying passengers for hire.

(45) "Public utility transmission system" means power transmission lines over 751 volts, telephone cables, or microwave transmission systems, or buried or exposed pipelines carrying water, natural gas, petroleum, or crude oil, or refined products and chemicals, whose services are regulated by the utilities and transportation commission, municipal, or other publicly owned systems.

(46) "Purchaser" means any person who buys, accepts, or receives any explosives or blasting agents.

(47) "Pyrotechnics" means any combustible or explosive compositions or manufactured articles designed and prepared for the purpose of producing audible or visible effects which are commonly referred to as fireworks.

(48) "Railroad" means any steam, electric, or other railroad which carries passengers for hire.

(49) "Railroad freight car" means cars that are built for and loaded with explosives and operated in accordance with DOT rules.

(50) "Semiconductive hose" means a hose with an electrical resistance high enough to limit flow of stray electric currents to safe levels, yet not so high as to prevent drainage of static electric charges to ground; hose of not more than 2 megohms resistance over its entire length and of not less than 5,000 ohms per foot meets the requirement.

(51) "Shall" means that the rule establishes a minimum standard which is mandatory.

(52) "Small arms ammunition" means any shotgun, rifle, pistol, or revolver cartridge, and cartridges for propellant-actuated power devices and industrial guns. Military-type ammunition containing explosive bursting charges, incendiary, tracer, spotting, or pyrotechnic projectiles is excluded from this definition.

(53) "Small arms ammunition primers" means small percussion-sensitive explosive charges encased in a cap or capsule and used to ignite propellant powder and shall include percussion caps as used in muzzle loaders.

(54) "Smokeless propellants" means solid chemicals or solid chemical mixtures in excess of fifty pounds which function by rapid combustion.

(55) "Special industrial explosive devices" means explosive-actuated power devices and propellant-actuated power devices.

(56) "Special industrial explosives materials" means shaped materials and sheet forms and various other extrusions, pellets, and packages of high explosives, which include dynamite, trinitrotoluene (TNT), pentaerythritol tetranitrate (PETN), hexahydro-1, 3, 5-trinitro-s-triazine (RDX), and other similar compounds used for high-energy-rate forming, expanding, and shaping in metal fabrication, and for dismemberment and quick reduction of scrap metal.

(57) "Sprung holes" means to spring or chamber the bottom of the drilled hole to allow room for additional explosives as a bottom load.

(58) "Trailer" means semitrailers or full trailers as defined by DOT, that are built for and loaded with explosives and operated in accordance with DOT rules.

(59) "Unclassified explosives" means any two components which, when mixed become capable of detonation by a No. 6 test blasting cap.

(60) "User" means any natural person, manufacturer, or blaster who acquires, purchases, or uses explosives as an ultimate consumer or who supervises such use.

(61) "Water gels or slurry explosives" comprise a wide variety of materials used for blasting. They all contain substantial proportions of water and high proportions of ammonium nitrate, some of which is in solution in the water. Two broad classes of water gels are:

(a) Those which are sensitized by a material classed as an explosive, such as TNT or smokeless powder,

(b) Those which contain no ingredient classified as an explosive; these are sensitized with metals such as aluminum or with other fuels. Water gels may be premixed at an explosives plant or mixed at the site immediately before delivery into the bore hole.

(62) "DOT specification" are regulations of the Department of Transportation published in 49 CFR Chapter I.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-417, filed 5/6/86.]

PART B--EXPLOSIVES LICENSING

WAC 296-52-421 Licenses--Information verification. Any information request by the department, in order to verify statements in an application or in order to

facilitate a department inquiry, shall be supplied prior to the issuance or renewal of a license.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-421, filed 5/6/86.]

WAC 296-52-425 Dealer's license. (RCW 70.74-.130 and 70.74.230, apply.)

(1) The application for a dealer's license to buy explosives for the sole purpose of resale shall be made to Department of Labor and Industries, Division of Industrial Safety and Health, Olympia.

(2) The license shall be renewed annually, no later than the expiration date.

(3) When an order for explosives is placed in person, by telephone, or in writing by a purchaser, the seller shall request proper authorization and identification from the purchaser and shall record the purchaser's license number.

(4) A dealer shall not distribute explosive materials to a company or individual on the order of a person who does not appear on the up to date list of representatives or agents and if the person does appear on the list, the dealer shall verify the identity of such person.

(5)(a) A dealer's record of all explosives purchased and sold as defined in RCW 70.74.010, shall be kept on file and a copy transmitted not later than the tenth of every month to the department.

(b) The purchaser's name and license number shall be stated on dealer's record, and the name of the person authorized by the purchaser to physically receive the explosives.

(6) Any package, cask, or can containing any explosive, nitroglycerin, dynamite, or powder that is put up for sale, or is delivered to any warehouseman, dock, depot, or common carrier shall be properly labeled thereon to indicate its explosive classification.

(7) If the explosives are delivered by the dealer or dealer's authorized agent to an explosives magazine, the license number of said magazine and the legal signature of the recipient, properly authorized and identified, shall be obtained.

(8) No person shall sell, display, or expose for sale any explosive or blasting agent on any highway, street, sidewalk, public way, or public place.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-425, filed 5/6/86.]

WAC 296-52-429 License for manufacturing. RCW 70.74.110, applies.

(1) The application for license for manufacturing explosives and/or blasting agents shall be made to Department of Labor and Industries, Division of Industrial Safety and Health, Olympia.

(2) The license shall be renewed annually, no later than the expiration date.

(3) A copy of the plan of the plant submitted with said application and approved by the department shall be kept in the plant open to inspection by the department.

(4) The manufacturing of explosives is covered by chapter 296-50 WAC.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-429, filed 5/6/86.]

WAC 296-52-433 Purchaser's license. RCW 70.74-.135, applies.

(1) The application for a purchaser's license shall be made by a legal person, including public agencies, to Department of Labor and Industries, Division of Industrial Safety and Health, Olympia.

Application forms may be obtained at all department district offices, and from explosives dealers.

Purchaser will be required to verify they have a user (blaster) with a valid license, which will be confirmed and approved by the department.

The department will grant a purchaser's license after all legal requirements have been fulfilled.

The license is valid for one year from date of issuance.

(2) Purchaser shall, prior to ordering explosive materials, furnish the dealer a current list of the representatives or agents authorized to order explosive materials on their behalf showing the name, address, drivers license number or valid identification and date and place of birth. A copy of the list shall be submitted with the purchaser's application. The dealer and the department lists shall be updated as changes occur.

(3) The individual who physically receives the purchased explosives shall prove to the satisfaction of the dealer that he, personally, is the purchaser, or the person authorized by the purchaser to receive said purchased explosives. Such authorization procedure shall be approved by the department. Said receiver of explosives shall identify himself properly and shall sign the dealer's record with his legal signature.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-433, filed 5/6/86.]

WAC 296-52-437 User's (blaster's) license. RCW 70.74.020, applies.

(1) The application for a user's (blaster's) license to use, blast or dispose explosives and blasting agents shall be made to Department of Labor and Industries, Division of Industrial Safety and Health, Olympia.

Application forms may be obtained at all department district offices, and from explosives dealers.

The license is valid for one year from date of issuance.

User (blaster) may be required to verify name of licensed purchaser, which will be confirmed and approved by the department.

(2) In addition to the submission of the application form, all new applicants, all applicants requesting change in classification of their license, and all applicants who have not renewed their user (blaster) license within sixty days of expiration will be required to submit a resume of successful blasting experience, properly witnessed, and to pass a written examination prepared and administered by the department.

(3) User (blaster) qualifications:

(a) A user (blaster) shall be able to understand and give written and oral orders.

(b) A user (blaster) shall be in good physical condition and not be addicted to narcotics, intoxicants, or

similar types of drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others.

(c) A user (blaster) shall be qualified by reason of training, knowledge, and experience, in the field of transporting, storing, handling, and use of explosives, and have a working knowledge of state and local laws and regulations which pertain to explosives.

(d) User (blaster) shall be required to furnish satisfactory evidence of competency in handling explosives and performing in a safe manner the type of blasting that will be required.

(e) The user (blaster) shall be knowledgeable and competent in the use of each type of blasting method used.

(4) The department will issue a user's license card which shall state the limitations imposed on the licensee and shall be presented by the user to authorized persons, upon request, together with valid personal identification.

(5) A "hand loader" as defined in RCW 70.74.010, does not require a user's license.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-437, filed 5/6/86.]

WAC 296-52-441 Storage magazine license. RCW 70.74.120, applies.

(1)(a) A separate application shall be made for each and every magazine.

(b) The application for a license to operate a permanent or portable storage magazine for explosives shall be made by the person responsible for the storage of the explosives, to the Department of Labor and Industries, Division of Industrial Safety and Health, Olympia.

(c) The exact location of the storage magazine shall be shown on the application, as well as, the kind and maximum quantity of explosives stored, and the distance to nearby structures and other magazines.

(2) A license fee shall be paid for one year, as shown in WAC 296-52-449. The fee will be collected or billed upon receipt of application.

(3) The said license shall be renewed annually, no later than the expiration date.

(4) A license number shall be permanently affixed on the inside and outside of each storage magazine. This license number will stay with each magazine during its life.

(5) The unlawful entry into an explosives magazine or an actual or suspected theft of explosives shall be reported immediately to the department and to the local law enforcement agency.

(6) If the magazine is used or leased by a person other than the owner, such other person shall then be responsible for the safe operation of the magazine, and for obtaining of the license.

When the responsibility for a magazine is transferred from one person to another, the transferor shall immediately notify the department, stating the magazine license number. The transferee shall execute a new application and pay the fee for one year, based on WAC 296-52-449.

(7) When a magazine is moved, altered or destroyed, the responsible person shall notify the department stating the magazine license number. When a magazine is altered, the alterations made shall be stated.

The moving of a magazine on a job site within a reasonable distance from its original location stated on the application is permitted without notifying the department; provided, that the new location complies with the Explosives Act and Explosives Code, and that the magazine can be quickly located for an inspection.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-441, filed 5/6/86.]

WAC 296-52-445 Annual inspection. RCW 70.74-.150, applies.

The department of labor and industries shall make, or cause to be made, at least one inspection during every year, of each licensed explosives plant or magazine.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-445, filed 5/6/86.]

WAC 296-52-449 Storage magazine license fees. RCW 70.74.140, applies.

The annual license fee for operating each magazine has been established by the department and shall be as shown in the following table:

Maximum weight (pounds) of explosives permitted in each magazine	Maximum number of blasting caps permitted in each magazine	Annual fee (dollars) for each magazine
200	133,000	5.00
600	400,000	10.00
1,000	667,000	15.00
2,000	1,330,000	20.00
4,000	2,670,000	25.00
6,000	4,000,000	30.00
8,000	5,230,000	35.00
10,000	6,670,000	40.00
20,000	13,330,000	45.00
Max. 300,000	Max. 20,000,000	50.00

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-449, filed 5/6/86.]

PART C--MAGAZINE CONSTRUCTION

WAC 296-52-453 Construction of magazines. (1) Construction of all explosive storage magazines must comply with Washington state and Bureau of Alcohol, Tobacco, and Firearms regulations.

(2) Construction of permanent storage facilities.

(a) General. A Class 1 storage facility shall be a permanent structure; a building, an igloo or army-type structure, a tunnel, or a dugout. It shall be bullet-resistant, fire-resistant, weather-resistant, theft-resistant, and well ventilated.

(b) Buildings. All building type storage facilities shall be constructed of masonry, wood, metal, or a combination of these materials and shall have no openings except for entrances and ventilation. Ground around such storage facilities shall slope away for drainage.

(c) Masonry wall construction. Masonry wall construction shall consist of brick, concrete, tile, cement block, or cinder block and shall be not less than 6 inches in thickness. Hollow masonry units used in construction shall have all hollow spaces filled with well tamped coarse dry sand or weak concrete (a mixture of one part cement and eight parts of sand with enough water to dampen the mixture while tamping in place). Interior wall shall be covered with a nonsparking material.

(d) Fabricated metal wall construction. Metal wall construction shall consist of sectional sheets of steel or aluminum not less than number 14 gauge, securely fastened to a metal framework. Such metal wall construction shall be either lined inside with brick, solid cement blocks, hardwood not less than 4 inches in thickness or material of equivalent strength, or shall have at least a 6 inch sand fill between interior and exterior walls. Interior walls shall be constructed of or covered with a nonsparking material.

(e) Wood frame wall construction. The exterior of outer wood walls shall be covered with iron or aluminum not less than number 26 gauge. An inner wall of nonsparking materials shall be constructed so as to provide a space of not less than 6 inches between the outer and inner walls, which space shall be filled with coarse dry sand or weak concrete.

(f) Floors. Floors shall be constructed of a nonsparking material and shall be strong enough to bear the weight of the maximum quantity to be stored.

(g) Foundations. Foundations shall be constructed of brick, concrete, cement block, stone, or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the buildings shall be enclosed with metal.

(h) Roof.

(i) Except for buildings with fabricated metal roofs, the outer roof shall be covered with no less than number 26–gauge iron or aluminum fastened to a 7/8–inch sheathing.

(ii) Where it is possible for a bullet to be fired directly through the roof and into the storage facility at such an angle that the bullet would strike a point below the top of inner walls, storage facilities shall be protected by one of the following methods:

(A) A sand tray shall be located at the tops of inner walls covering the entire ceiling area, except that necessary for ventilation, lined with a layer of building paper, and filled with not less than 4 inches of coarse dry sand.

(B) A fabricated metal roof shall be constructed of 3/16–inch plate steel lined with 4 inches of hardwood or material of equivalent strength (for each additional 1/16–inch of plate steel, the hardwood or material of equivalent strength lining may be decreased one inch).

(i) Doors. All doors shall be constructed of 1/4–inch plate steel and lined with 2 inches of hardwood or material of equivalent strength. Hinges and hasps shall be attached to the doors by welding, riveting or bolting (nuts on inside of door). They shall be installed in such a manner that the hinges and hasps cannot be removed when the doors are closed and locked.

(j) Locks. Each door shall be equipped with two mortise locks; or with two padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock, or with a mortise lock that requires two keys to open; or a three–point lock. Padlocks shall have at least five tumblers and a case–hardened shackle of at least 3/8–inch diameter. Padlocks shall be protected with not less than 1/4–inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(k) Ventilation. Except at doorways, a 2–inch air space shall be left around ceilings and the perimeter of floors. Foundation ventilators shall be not less than 4 by 6 inches. Vents in the foundation, roof, or gables shall be screened and offset.

(l) Exposed metal. No sparking metal construction shall be exposed below the top of walls in the interior of storage facilities, and all nails therein shall be blind–nailed, countersunk or nonsparking.

(m) Igloos, army–type structures, tunnels and dugouts. Storage facilities shall be constructed of reinforced concrete, masonry, metal or a combination of these materials. They shall have an earthmound covering of not less than 24 inches on the top, sides and rear unless the magazine meets the requirements of (h)(ii) of this subsection. Interior walls and floors shall be covered with a nonsparking material. Storage facilities of this type shall also be constructed in conformity with the requirements of subsection (1)(a), (b), (f), (i), (j), (k) and (l) of this section.

(3) Construction of portable (field) storage facilities.

(a) General. A Class 2 storage facility shall be a box, a trailer, a semitrailer or other mobile facility. It shall be bullet–resistant, fire–resistant, weather–resistant, theft–resistant, and well ventilated. Portable magazines shall be at least one cubic yard in size. They are to be supported to prevent direct contact with the ground. The ground around magazines shall slope away for drainage or other adequate drainage provided. When unattended, vehicular magazines shall have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by the department.

(b) Construction. The exterior and doors shall be constructed of not less than 1/4–inch steel and lined with at least two inches of hardwood. Magazines with top openings shall have lids with water–resistant seals or shall overlap the sides by at least one inch when in a closed position.

(c) Hinges and hasps. Hinges and hasps shall be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps shall be installed so that they cannot be removed when the doors are closed and locked.

(d) Locks. Each door shall be equipped with two mortise locks; or with two padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock, or with a mortise lock that requires two keys to open; or a three–point lock. Padlocks shall have

at least five tumblers and a case–hardened shackle of at least 3/8–inch diameter. Padlocks shall be protected with not less than 1/4–inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(e) Ventilation. Except at doorways, a 2–inch air space shall be left around ceilings and the perimeter of floors. Foundation ventilators shall be not less than 4 by 6 inches. Vents in the foundation, roof, or gables shall be screened and offset.

(f) Exposed metal. No sparking metal construction shall be exposed below the top of walls in the interior of storage facilities and all nails therein shall be blind–nailed, countersunk, or nonsparking.

Note: The following alternatives may be used. (All steel and wood dimensions indicated are actual thicknesses. To meet the concrete block and brick dimensions indicated, the manufacturer's represented thicknesses may be used.)

(i) Exterior of 5/8–inch steel, lined with an interior of any type of nonsparking material.

(ii) Exterior of 1/2–inch steel, lined with an interior of not less than 3/8–inch plywood.

(iii) Exterior of 3/8–inch steel, lined with an interior of two inches of hardwood.

(iv) Exterior of 3/8–inch steel, lined with an interior of three inches of softwood or 2–1/4–inches of plywood.

(v) Exterior of 1/4–inch steel, lined with an interior of five inches of softwood or 5–1/4–inches of plywood.

(vi) Exterior of 3/16–inch steel, lined with an interior of four inches of hardwood.

(vii) Exterior of 3/16–inch steel, lined with an interior of seven inches of softwood or 6–3/4–inches of plywood.

(viii) Exterior of 3/16–inch steel, lined with an intermediate layer of three inches of hardwood and an interior lining of 3/4–inch plywood.

(ix) Exterior of 1/8–inch steel, lined with an interior of five inches of hardwood.

(x) Exterior of 1/8–inch steel, lined with an interior of nine inches of softwood.

(xi) Exterior of 1/8–inch steel, lined with an intermediate layer of four inches of hardwood and an interior lining of 3/4–inch plywood.

(xii) Exterior of any type of fire–resistant material which is structurally sound, lined with an intermediate layer of four inches solid concrete block or four inches solid brick or four inches of solid concrete, and an interior lining of 1/2–inch plywood placed securely against the masonry lining.

(xiii) Standard eight–inch concrete block with voids filled with well–tamped sand/cement mixture.

(xiv) Standard eight–inch solid brick.

(xv) Exterior of any type of fire–resistant material which is structurally sound, lined with an intermediate six–inch space filled with well–tamped dry sand or well–tamped sand/cement mixture.

(xvi) Exterior of 1/8–inch steel, lined with a first intermediate layer of 3/4–inch plywood, a second intermediate layer of 3–5/8–inches well–tamped dry sand or sand/cement mixture and an interior lining of 3/4–inch plywood.

(xvii) Exterior of any type of fire–resistant material, lined with a first intermediate layer of 3/4–inch plywood, a second intermediate layer of 3–5/8–inch well–tamped dry sand or sand/cement mixture, a third intermediate layer of 3/4–inch plywood, and a fourth intermediate layer of two inches of hardwood or 14–gauge steel and an interior lining of 3/4–inch plywood.

(xviii) Eight–inch thick solid concrete.

(4) Construction of detonator (blasting cap) indoor storage facilities.

(a) General. Class 3 storage facility for detonators (blasting caps) in quantities of 1,000 or less shall be fire–resistant and theft–resistant. They need not be bullet–resistant and weather–resistant if the locked uninhabited building in which they are stored provide protection from the weather and from bullet penetration.

(b) Construction. Sides, bottoms and covers shall be constructed of not less than number 12–gauge metal and lined with a nonsparking material.

(c) Hinges and hasps shall be attached so they cannot be removed from the outside.

(d) Locks. One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case–hardened shackle of at least 3/8–inch diameter is sufficient for locking purposes.

(5) Construction of blasting agent, low explosive or electric blasting cap storage facilities.

(a) General. A Class 4 storage facility may be a building, an igloo, or army–type structure, a tunnel, a dugout, a box, a trailer, or a semitrailer or other mobile facility. They shall be fire–resistant, weather–resistant and theft–resistant. The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by the department.

Note: As a result of tests with electric blasting caps, it has been determined that these blasting caps are not subject to sympathetic detonation. Therefore, a Class 4 storage facility meets the necessary requirements for storage of electric blasting caps.

(b) Construction. These magazines shall be constructed of masonry, metal–covered wood, fabricated metal, or a combination of these materials. Foundations are to be constructed of brick, concrete, cement block, stone, or metal or wood posts. If piers or posts are used, in lieu of a continuous foundation, the space under the building shall be enclosed with fire–resistant material. The walls and floors are to be constructed of, or covered with, a nonsparking material or lattice work. The doors shall be metal or solid wood covered with metal.

(c) Hinges and hasps. Hinges and hasps shall be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps shall be installed so that they cannot be removed when the doors are closed and locked.

(d) Locks. Each door shall be equipped with two mortise locks; or with two padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock, or with a mortise lock that requires two

keys to open; or a three-point lock. Padlocks shall have at least five tumblers and a case-hardened shackle of at least 3/8-inch diameter. Padlocks shall be protected with not less than 1/4-inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps and staples. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(6) Construction of blasting agent storage facilities.

(a) General. A Class 5 storage facility may be a building, igloo or army-type structure, tunnel, dugout, bin, box, trailer, or a semitrailer or other mobile facility. They shall be weather-resistant and theft-resistant. The ground around such storage facilities shall slope away for drainage. When unattended, vehicular storage facilities shall have wheels removed or otherwise effectively immobilized by kingpin locking devices or other methods approved by the department.

(b) Construction. The doors shall be constructed of solid wood or metal.

(c) Hinges and hasps. Hinges and hasps shall be attached to doors by welding, riveting, or bolting (nuts on inside of door). Hinges and hasps shall be installed so that they cannot be removed when the doors are closed and locked.

(d) Locks. Each door shall be equipped with two mortise locks; or with two padlocks fastened in separate hasps and staples; or with a combination of mortise lock and a padlock, or with a mortise lock that requires two keys to open; or a three-point lock. Padlocks shall have at least five tumblers and a case-hardened shackle of at least 3/8-inch diameter. Padlocks shall be protected with not less than 1/4-inch steel hoods constructed so as to prevent sawing or lever action on the locks, hasps, and staples.

Note: Trailers, semitrailers, and similar vehicular magazines may, for each door, be locked with one steel padlock (which need not be protected by a steel hood) having at least 3/8-inch diameter, if the door hinges and lock hasp are securely fastened to the magazine and to the door frame. These requirements do not apply to magazine doors that are adequately secured on the inside by means of a bolt, lock, or bar that cannot be actuated from the outside.

(7) Construction of day box storage facilities for explosives.

(a) General. A temporary storage facility shall be a day box. It must be fire-resistant, weather-resistant and theft-resistant. The ground around such storage facilities shall slope away for drainage.

(b) Construction. A day box shall be constructed of not less than number 12-gauge (.1046 inches) steel, lined with at least either 1/2-inch plywood or 1/2-inch Masonite-type hardboard. Doors shall overlap sides by at least one inch.

(c) Hinges and hasps. Hinges and hasps are to be attached by welding, riveting or bolting (nuts on inside).

(d) Locks. One steel padlock (which need not be protected by a steel hood) having at least five tumblers and a case-hardened shackle of at least 3/8-inch diameter is sufficient for locking purposes.

(e) Unattended storage. No explosive materials shall be left in a day box if unattended. The explosive materials contained therein shall be removed to licensed storage facilities for unattended storage.

(8) Construction of day box storage facilities for detonators (blasting caps).

(a) General. Temporary storage facilities for blasting caps in quantities of 100 or less.

(b) Construction. Sides, bottoms and covers shall be constructed of number 12-gauge metal and lined with a nonsparking material.

(c) Hinges and hasps shall be attached thereto by welding.

(d) Locks. A single five-tumbler proof lock shall be sufficient for locking purposes.

(e) No explosive materials shall be left in such facilities if unattended. The explosive materials contained therein shall be removed to licensed storage facilities for unattended storage.

(9) Magazine heating systems requirements, NFPA Code No. 495, "Manufacture, Transportation, Storage and Use of Explosive Materials, 1973." The following will apply:

(a) Magazines requiring heat shall be heated by either hot water radiant heating within the magazine building; or air directed into the magazine building over either hot water or low pressure steam (15 psig) coils located outside the magazine building.

(b) The magazine heating systems shall meet the following requirements:

(i) The radiant heating coils within the building shall be installed in such a manner that the explosive materials or their containers cannot contact the coils and air is free to circulate between the coils and the explosive materials or their containers.

(ii) The heating ducts shall be installed in such a manner that the hot air discharge from the duct is not directed against the explosive materials or their containers.

(iii) The heating device used in connection with a magazine shall have controls which prevent the ambient building temperature from exceeding 130°F.

(iv) The electric fan or pump used in the heating system for a magazine shall be mounted outside and separate from the wall of the magazine and shall be grounded.

(v) The electric fan motor and the controls for electrical heating devices used in heating water or steam shall have overloads and disconnects, which comply with the National Electrical Code, (National Fire Protection Association, NFPA No. 70-1984). All electrical switch gear shall be located a minimum distance of 25 feet from the magazine.

(vi) The heating source for water or steam shall be separated from the magazine by a distance of not less than 25 feet when electrical and 50 feet when fuel-fired. The area between the heating unit and the magazine shall be cleared of all combustible materials.

(vii) The storage of explosive materials and their containers in the magazine shall allow uniform air circulation so temperature uniformity can be maintained throughout the explosive materials.

(10) Lighting.

(a) Battery-activated safety lights or battery-activated safety lanterns may be used in explosives storage magazines.

(b) Electric lighting used in any explosives storage magazine shall meet the standards prescribed by the "National Electrical Code," (National Fire Protection Association, NFPA 70-84), for the conditions present in the magazine at any time. All electrical switches shall be located outside of the magazine and also meet the standards prescribed by the National Electrical Code.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-453, filed 5/6/86.]

PART D--EXPLOSIVES STORAGE

WAC 296-52-457 Storage of caps with other explosives prohibited. No blasting caps, or other detonating or fulminating caps, or detonators, or flame-producing devices shall be kept or stored in any magazine in which other explosives are kept or stored.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-457, filed 5/6/86.]

WAC 296-52-461 Storage of explosives. (1) General. All Class A, Class B, Class C explosives, and special industrial explosives, and any newly developed and unclassified explosives, shall be kept in magazines which meet the requirements as defined in chapter 70.74 RCW and chapter 296-52 WAC, unless they are in the process of manufacture, being physically handled in the operating process, being used or being transported to a place of storage or use. No explosives and no detonators (blasting caps) in quantities of 1,001 or more shall be stored in any building or structure except a Class 1, permanent, magazine that has been approved and licensed.

Note 1: Separate storage of components capable of detonation when mixed. Any two components which, when mixed, become capable of detonation by a number 6 cap must be stored in separate locked containers or in a licensed, approved magazine.

Note 2: Electromagnetic radiation. Blasting operations or storage of electrical detonators shall be prohibited in vicinity of operating radio frequency (RF) transmitter stations except where the clearances, as referenced in WAC 296-52-493(g), can be observed.

Note 3: Blasting caps, electric blasting caps, detonating primers and primed cartridges shall not be stored in the same magazine with other explosives.

(2) Quantity restrictions. Explosive materials in excess of 300,000 pounds or blasting caps in excess of 20,000,000 shall not be stored in one storage magazine.

(3) Inventory and responsibility.

(a) Magazines shall be in the charge of a competent person at all times who shall be at least twenty-one years of age, and who shall be held responsible for the enforcement of all safety precautions.

(b) All explosives shall be accounted for at all times. Explosives not being used shall be kept in a locked magazine, unavailable to persons not authorized to handle them. The employer shall maintain an inventory and use record of all explosives.

(c) Appropriate authorities shall be notified of any loss, theft, or unauthorized entry into a magazine.

(4) Surrounding area.

(a) Smoking, matches, open flames, spark-producing devices, and firearms (except firearms carried by guards) shall not be permitted inside of or within 50 feet of magazines.

(b) The land surrounding a magazine shall be kept clear of all combustible materials, brush, dried grass, leaves and other materials for a distance of at least 25 feet.

(c) Combustible materials shall not be stored within 50 feet of magazines.

(5) Signs. The premises on which a magazine is located shall be conspicuously marked with signs containing the words "EXPLOSIVES - KEEP OFF" in letters at least three inches high. Such signs shall warn any person approaching the magazine of the presence of explosives, but shall be so located that a bullet passing directly through the face of the sign will not strike the magazine.

(6) Temporary storage at a site for blasting operations shall be located away from neighboring inhabited buildings, railways, highways, and other magazines. A distance of at least one hundred and fifty feet shall be maintained between magazines and the work in progress when the quantity of explosives kept therein is in excess of 25 pounds, and at least 50 feet when the quantity of explosives is 25 pounds or less.

(7) Explosives recovered from blasting misfires shall be placed in a separate magazine until competent personnel has determined from the manufacturer the method of disposal. Caps recovered from blasting misfires shall not be reused. Such explosives and caps shall then be disposed of in the manner recommended by the manufacturer.

(8) Storage within magazines.

(a) Packages of explosives shall be laid flat with top side up. Black powder when stored in magazines with other explosives shall be stored separately. Black powder stored in kegs shall be stored on ends, bungs down, or on side, seams down. Corresponding grades and brands shall be stored together in such a manner that brands and grade marks show. All stocks shall be stored so as to be easily counted and checked. Packages of explosives shall be piled in a stable manner. When any kind of explosive is removed from a magazine for use, the oldest explosive of that particular kind shall always be taken first.

(b) Tools used for opening packages of explosives shall be constructed of nonsparking materials, except that nonsparking metallic slitters may be used for opening fiberboard boxes. A wood wedge and a fiber, rubber, or wood mallet shall be used for opening or closing wood packages of explosives. Opened packages of explosives shall be securely closed before being returned to a magazine.

(c) Magazines shall not be used for the storage of any metal tools nor any commodity except explosives, but this restriction shall not apply to the storage of blasting agents and blasting supplies.

(d) Magazine floors shall be regularly swept, kept clean, dry, free of grit, paper, empty used packages, and rubbish. Brooms and other cleaning utensils shall not have any spark-producing metal parts. Sweepings from floors of magazines shall be properly disposed of. Magazine floors stained with nitroglycerin shall be cleaned according to instructions by the manufacturer.

(e) When any explosive has deteriorated to an extent that it is in an unstable or dangerous condition, or if nitroglycerin leaks from any explosives, then the person in possession of such explosive shall immediately proceed to destroy such explosive in accordance with the instructions of the manufacturer. Only experienced persons shall be allowed to do the work of destroying explosives.

(f) When magazines need inside repairs, all explosives shall be removed therefrom and the floors cleaned. In making outside repairs, if there is a possibility of causing sparks or fire the explosives shall be removed from the magazine. Explosives removed from a magazine under repair shall either be placed in another magazine or placed a safe distance from the magazine where they shall be properly guarded and protected until repairs have been completed, when they shall be returned to the magazine.

(9) Underground storage.

(a) Explosives and related materials shall be stored in approved facilities required under the provisions of chapter 296-52 WAC.

(b) No explosives or blasting agents shall be permanently stored in any underground operation until the operation has been developed to the point where at least two modes of exit have been developed.

(c) Permanent underground storage magazines shall be at least 300 feet from any shaft, adit, or active underground working area.

(d) Permanent underground magazines containing detonators shall not be located closer than 50 feet to any magazine containing other explosives or blasting agents.

(e) Upon the approach of an electrical storm, unless a greater hazard would be created thereby, explosives at the adit or the top of any shaft leading to where persons are working shall be moved away from such location a distance equal to that required for inhabited buildings, as listed in the American table of distances for storage of explosive materials.

(10) All explosive manufacturing buildings and magazines in which explosives or blasting agents, except small arms ammunition and smokeless powder are had, kept, or stored, must be located at distances from inhabited buildings, railroads, highways, and public utility transmission systems in conformity with the following quantity and distance tables, and these tables shall be the basis on which applications for license for storage shall be made and license for storage issued, as provided in RCW 70.74.110 and 70.74.120. All distances prescribed in the following quantity and distance tables are unbarricaded, and, if there is an efficient artificial barricade or natural barricade between the explosives manufacturing building or magazine and another explosives manufacturing building or magazine, building, railroad, highway, or public utility transmission system, the distance prescribed in the following quantity and distance tables may be reduced by one-half. Blasting and electric blasting caps in strength through number 8 should be rated as one and one-half pounds of explosives per one thousand caps. Blasting and electric blasting caps of strength higher than number 8 should be computed on the combined weight of explosives.

(11) When two or more storage magazines are located on the same property, each magazine must comply with the minimum distances specified from inhabited buildings, railways, and highways, and in addition, they should be separated from each other by not less than the distances shown for "separation of magazines", except that the quantity of explosives contained in cap magazines shall govern in regard to the spacing of said cap magazines from magazines containing other explosives. If any two or more magazines are separated from each other by less than the specified "separation of magazines" distances, then such two or more magazines, as a group, must be considered as one magazine, and the total quantity of explosives stored in such group must be treated as if stored in a single magazine located on the site of any magazine of the group, and must comply with the minimum of distances specified from other magazines, inhabited buildings, railways and highways.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-461, filed 5/6/86.]

WAC 296-52-465 Storage of ammonium nitrate. (1) Scope and definitions.

(a) Except as provided in (d) of this subsection applies to the storage of ammonium nitrate in the form of crystals, flakes, grains, or prills including fertilizer grade, dynamite grade, nitrous oxide grade, technical grade, and other mixtures containing 60 percent or more ammonium nitrate by weight but does not apply to blasting.

(b) This section does not apply to the transportation of ammonium nitrate.

(c) This section does not apply to storage under the jurisdiction of and in compliance with the regulations of the United States Coast Guard (see 46 CFR Parts 146-149).

(d) The storage of ammonium nitrate and ammonium nitrate mixtures that are more sensitive than allowed by the "definition of test procedures for ammonium nitrate fertilizer" is prohibited.

(e) Nothing in this section shall apply to the production of ammonium nitrate or to the storage of ammonium nitrate on the premises of the producing plant, provided that no distinct undue hazard to the public is created.

(f) The definition and test procedures for ammonium nitrate fertilizer are those found in the bulletin, "Definition and test procedures for ammonium nitrate fertilizer," available from the National Plant Food Institute, 1700 K Street N.W., Washington, D.C. 20006. This

definition limits the contents of organic materials, metals, sulfur, etc., in a product that may be classified ammonium nitrate fertilizer.

(g) The standards for ammonium nitrate (nitrous oxide grade) are those found in the "specifications, properties, and recommendations for packaging, transportation, storage, and use of ammonium nitrate," available from the Compressed Gas Association, Inc., 500 Fifth Avenue, New York, NY 10036.

(2) General provisions.

(a) This subsection applies to all persons storing, having, or keeping ammonium nitrate, and to the owner or lessee of any building, premises, or structure in which ammonium nitrate is stored in quantities of 1,000 pounds or more.

(b) Approval of large quantity storage shall be subject to due consideration of the fire and explosion hazards, including exposure to toxic vapors from burning or decomposing ammonium nitrate.

(c) Storage buildings shall not have basements unless the basements are open on at least one side. Storage buildings shall not be over one story in height.

(d) Storage buildings shall have adequate ventilation or be of a construction that will be self–ventilating in the event of fire.

(e) The wall on the exposed side of a storage building within 50 feet of a combustible building, forest, piles of combustible materials and similar exposure hazards shall be of fire–resistive construction. In lieu of the fire–resistive wall, other suitable means of exposure protection such as a free standing wall may be used. The roof coverings shall be Class C or better, as defined in Roof Coverings, NFPA 203M–1970.

(f) All flooring in storage and handling areas, shall be of noncombustible material or protected against impregnation by ammonium nitrate and shall be without open drains, traps, tunnels, pits, or pockets into which any molten ammonium nitrate could flow and be confined in the event of fire.

(g) The continued use of an existing storage building or structure not in strict conformity with this section may be approved in cases where such continued use will not constitute a hazard to life or adjoining property.

(h) Buildings and structures shall be dry and free from water seepage through the roof, walls, and floors.

(3) Storage of ammonium nitrate in bags, drums, or other containers.

(a) Bags and containers used for ammonium nitrate must comply with specifications and standards required for use in interstate commerce (see 49 CFR Chapter I).

(b) Containers used on the premises in the actual manufacturing or processing need not comply with provisions of (a) of this subsection.

(c) Containers of ammonium nitrate shall not be accepted for storage when the temperature of the ammonium nitrate exceeds 130°F.

(d) Bags of ammonium nitrate shall not be stored within 30 inches of the storage building walls and partitions.

(e) The height of piles shall not exceed 20 feet. The width of piles shall not exceed 20 feet and the length 50 feet except that where the building is of noncombustible construction or is protected by automatic sprinklers the length of piles shall not be limited. In no case shall the ammonium nitrate be stacked closer than 36 inches below the roof or supporting and spreader beams overhead.

(f) Aisles shall be provided to separate piles by a clear space of not less than 3 feet in width. At least one service or main aisle in the storage area shall be not less than 4 feet in width.

(4) Storage of bulk ammonium nitrate.

(a) Warehouses shall have adequate ventilation or be capable of adequate ventilation in case of fire.

(b) Unless constructed of noncombustible material or unless adequate facilities for fighting a roof fire are available, bulk storage structures shall not exceed a height of 40 feet.

(c) Bins shall be clean and free of materials which may contaminate ammonium nitrate.

(d) Due to the corrosive and reactive properties of ammonium nitrate, and to avoid contamination, galvanized iron, copper, lead, and zinc shall not be used in a bin construction unless suitably protected. Aluminum bins and wooden bins protected against impregnation by ammonium nitrate are permissible. The partitions dividing the ammonium nitrate storage from other products which would contaminate the ammonium nitrate shall be of tight construction.

(e) The ammonium nitrate storage bins or piles shall be clearly identified by signs reading "ammonium nitrate" with letters at least 2 inches high.

(f) Piles or bins shall be so sized and arranged that all material in the pile is moved out periodically in order to minimize possible caking of the stored ammonium nitrate.

(g) Height or depth of piles shall be limited by the pressure–setting tendency of the product. However, in no case shall the ammonium nitrate be piled higher at any point than 36 inches below the roof or supporting and spreader beams overhead.

(h) Ammonium nitrate shall not be accepted for storage when the temperature of the product exceeds 130°F.

(i) Dynamite, other explosives, and blasting agents shall not be used to break up or loosen caked ammonium nitrate.

(5) Contaminants.

(a) Ammonium nitrate shall be in a separate building or shall be separated by approved type firewalls of not less than 1 hour fire–resistance rating from storage or organic chemicals, acids, or other corrosive materials, materials that may require blasting during processing or handling, compressed flammable gases, flammable and combustible materials or other contaminating substances, including but not limited to animal fats, baled cotton, baled rags, baled scrap paper, bleaching powder, burlap or cotton bags, caustic soda, coal, coke, charcoal, cork, camphor, excelsior, fibers of any kind, fish oils, fish meal, foam rubber, hay, lubricating oil, linseed oil, or other oxidizable or drying oils, naphthalene, oakum, oiled clothing, oiled paper, oiled textiles, paint, straw, sawdust, wood shavings, or vegetable oils. Walls referred

to in this subsection need extend only to the underside of the roof.

(b) In lieu of separation walls, ammonium nitrate may be separated from the materials referred to in (a) of this subsection by a space of at least 30 feet.

(c) Flammable liquids such as gasoline, kerosene, solvents, and light fuel oils shall not be stored on the premises except when such storage conforms to WAC 296-24-330, and when walls and sills or curbs are provided in accordance with (a) or (b) of this subsection.

(d) LP-Gas shall not be stored on the premises except when such storage conforms to WAC 296-24-475.

(e) Sulfur and finely divided metals shall not be stored in the same building with ammonium nitrate except when such storage conforms to chapter 296-52 WAC.

(f) Explosives and blasting agents shall not be stored in the same building with ammonium nitrate except on the premises of makers, distributors, and user-compounders of explosives or blasting agents.

(g) Where explosives or blasting agents are stored in separate buildings, other than on the premises of makers, distributors, and user-compounders of explosives or blasting agents, they shall be separated from the ammonium nitrate by the distances and/or barricades specified in Table H-22 of WAC 296-52-481, but by not less than 50 feet.

(h) Storage and/or operations on the premises of makers, distributors, and user-compounders of explosives or blasting agents shall be in conformity with chapter 296-52 WAC.

(6) General precautions.

(a) Electrical installations shall conform to the requirements of chapter 296-46 WAC for ordinary locations. They shall be designed to minimize damage from corrosion.

(b) In areas where lightning storms are prevalent, lightning protection shall be provided. (See the Lightning Protection Code, NFPA 78-1968.)

(c) Provisions shall be made to prevent unauthorized personnel from entering the ammonium nitrate storage area.

(7) Fire protection.

(a) Not more than 2,500 (2270 metric) tons of bagged ammonium nitrate shall be stored in a building or structure not equipped with an automatic sprinkler system. Sprinkler systems shall be of the approved type and installed in accordance with WAC 296-24-607.

(b) Suitable fire control devices such as small hose or portable fire extinguishers shall be provided throughout the warehouse and in the loading and unloading areas. Suitable fire control devices shall comply with the requirements of WAC 296-24-592 and 296-24-602.

(c) Water supplies and fire hydrants shall be available in accordance with recognized good practices.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-465, filed 5/6/86.]

WAC 296-52-469 Storage of blasting agents and supplies. (1) Blasting agents or ammonium nitrate, when stored in conjunction with explosives, shall be stored in the manner set forth in WAC 296-52-453 (2)(a) for explosives. The mass of blasting agents and one-half the mass of ammonium nitrate shall be included when computing the total quality of explosives for determining distance requirements.

(2) Blasting agents, when stored entirely separate from explosives, may be stored in the manner set forth in WAC 296-52-453 (5) and (6) or in one-story warehouses (without basements) which shall be:

(a) Noncombustible or fire resistive;

(b) Constructed so as to eliminate open floor drains and piping into which molten materials could flow and be confined in case of fire;

(c) Weather resistant;

(d) Well ventilated; and

(e) Equipped with a strong door kept securely locked except when open for business.

(3) Semitrailer or full-trailer vans used for highway or on-site transportation of the blasting agents are satisfactory for temporarily storing these materials, provided they are located in accordance with Table H-21 with respect to inhabited buildings, passenger railways, and public highways and according to Table H-22 with respect to one another. Trailers shall be provided with substantial means for locking, and the trailer doors shall be kept locked, except during the time of placement and removal of stocks of blasting agents.

(4) Warehouses used for the storage of blasting agents shall be located in accordance with the provisions of Table H-21 with respect to inhabited buildings, passenger railways, and public highways, and according to Table H-22 with respect to one another.

(5) If both blasting agents and ammonium nitrate are handled or stored within the distance limitations prescribed in Table H-21, one-half the mass of the ammonium nitrate shall be added to the mass of the blasting agent when computing the total quality of explosives for determining the proper distance.

(6) Smoking, matches, open flames, spark producing devices, and firearms are prohibited inside of or within 50 feet of any warehouse used for the storage of blasting agents. Combustible materials shall not be stored within 50 feet of warehouses used for the storage of blasting agents.

(7) The interior of warehouses used for the storage of blasting agents shall be kept clean and free from debris and empty containers. Spilled materials shall be cleaned up promptly and safely removed. Combustible materials, flammable liquids, corrosive acids, chlorates, or nitrates shall not be stored in any warehouse used for blasting agents unless separated therefrom by a fire resistive separation of not less than one hour resistance. The provisions of this subsection shall not prohibit the storage of blasting agents together with nonexplosive blasting supplies.

(8) Piles of ammonium nitrate and warehouses containing ammonium nitrate shall be adequately separated from readily combustible fuels.

(9) Caked oxidizers, either in bags or in bulk, shall not be loosened by blasting.

(10) Every warehouse used for the storage of blasting agents shall be under the supervision of a competent person who shall be not less than twenty–one years of age.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–10–044 (Order 86–24), § 296–52–469, filed 5/6/86.]

WAC 296–52–473 Quantity and distance tables for storage.

TABLE H–21
AMERICAN TABLE OF DISTANCES FOR STORAGE OF EXPLOSIVES

If there is an efficient artificial or natural barricade between magazine and building, railroad, highway or public utility transmission system, the distance in the following table may be reduced by one–half. Reference WAC 296–52–461(10)

Column 1 Quantity that may be had, kept or stored		Column 2 Distance From Nearest Inhabited Building	Column 3 Distance From Nearest Railroad	Column 4 Distance From Nearest Highway & Pub. Util. Trans. System
EXPLOSIVES				
Pounds over	Pounds not over	Feet	Feet	Feet
2	5	140	60	60
5	10	180	70	70
10	20	220	90	90
20	30	250	100	100
30	40	280	110	110
40	50	300	120	120
50	75	340	140	140
75	100	380	150	150
100	125	400	160	160
125	150	430	170	170
150	200	470	190	190
200	250	510	210	210
250	300	540	220	220
300	400	590	240	240
400	500	640	260	260
500	600	680	270	270
600	700	710	290	290
700	800	750	300	300
800	900	780	310	310
900	1,000	800	320	320
1,000	1,200	850	340	330
1,200	1,400	900	360	340
1,400	1,600	940	380	350
1,600	1,800	980	390	360
1,800	2,000	1,010	410	370
2,000	2,500	1,090	440	380
2,500	3,000	1,160	470	390
3,000	4,000	1,270	510	420
4,000	5,000	1,370	550	450
5,000	6,000	1,460	590	470
6,000	7,000	1,540	620	490
7,000	8,000	1,600	640	500
8,000	9,000	1,670	670	510
9,000	10,000	1,730	690	520
10,000	12,000	1,750	740	540
12,000	14,000	1,770	780	550
14,000	16,000	1,800	810	560
16,000	18,000	1,880	840	570
18,000	20,000	1,950	870	580
20,000	25,000	2,110	940	630
25,000	30,000	2,260	1,000	680
30,000	35,000	2,410	1,050	720
35,000	40,000	2,550	1,100	760
40,000	45,000	2,680	1,140	800
45,000	50,000	2,800	1,180	840
50,000	55,000	2,920	1,220	880
55,000	60,000	3,030	1,260	910
60,000	65,000	3,130	1,290	940
65,000	70,000	3,220	1,320	970
70,000	75,000	3,310	1,350	1,000
75,000	80,000	3,390	1,380	1,020
80,000	85,000	3,460	1,410	1,040
85,000	90,000	3,520	1,440	1,060
90,000	95,000	3,580	1,460	1,080
95,000	100,000	3,630	1,490	1,090
100,000	110,000	3,670	1,540	1,100
110,000	120,000	3,710	1,580	1,110
120,000	130,000	3,750	1,620	1,120
130,000	140,000	3,780	1,670	1,130
140,000	150,000	3,800	1,700	1,140
150,000	160,000	3,870	1,740	1,160
160,000	170,000	3,930	1,780	1,180
170,000	180,000	3,980	1,810	1,200
180,000	190,000	4,020	1,840	1,210
190,000	200,000	4,060	1,870	1,220
200,000	210,000	4,110	1,910	1,240
210,000	230,000	4,200	1,960	1,270
230,000	250,000	4,310	2,020	1,300
250,000	275,000	4,430	2,080	1,340
275,000	300,000	4,550	2,150	1,380

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–10–044 (Order 86–24), § 296–52–473, filed 5/6/86.]

WAC 296–52–477 Quantity and distance table for separation between magazines. Magazines containing blasting caps and electric blasting caps shall be separated from other magazines containing like contents, or from magazines containing explosives by distances based on the following:

(1) Blasting caps in strengths through number 8 should be rated at one and one–half pounds of explosive per one thousand caps;

(2) For strengths higher than number 8, use the total combined weight of explosives;

(3) For quantity and distance purposes, detonating cord of 50 or 60 grains shall be calculated as equivalent to 9 pounds of high explosives per 1,000 feet. Heavier or lighter core loads should be rated proportionately.

(4) Magazines in which explosives are kept and stored shall be detached from other structures and separated from other magazines in conformity with the quantity and distance table set forth below:

TABLE H–21
QUANTITY AND DISTANCE TABLE FOR SEPARATION BETWEEN MAGAZINES CONTAINING EXPLOSIVES

Pounds Over	Pounds Not Over	Separation Distance in Feet Between Magazines Not Barricaded	Barricaded
2	5	12	6
5	10	16	8
10	20	20	10
20	30	22	11
30	40	24	12
40	50	28	14
50	75	30	15
75	100	32	16

Pounds Over	Pounds Not Over	Separation Distance in Feet Between Magazines Not Barricaded	Barricaded
100	125	36	18
125	150	38	19
150	200	42	21
200	250	46	23
250	300	48	24
300	400	54	27
400	500	58	29
500	600	62	31
600	700	64	32
700	800	66	33
800	900	70	35
900	1,000	72	36
1,000	1,200	78	39
1,200	1,400	82	41
1,400	1,600	86	43
1,600	1,800	88	44
1,800	2,000	90	45
2,000	2,500	98	49
2,500	3,000	104	52
3,000	4,000	116	58
4,000	5,000	122	61
5,000	6,000	130	65
6,000	7,000	136	68
7,000	8,000	144	72
8,000	9,000	150	75
9,000	10,000	156	78
10,000	12,000	164	82
12,000	14,000	174	87
14,000	16,000	180	90
16,000	18,000	188	94
18,000	20,000	196	98
20,000	25,000	210	105
25,000	30,000	224	112
30,000	35,000	238	119
35,000	40,000	248	124
40,000	45,000	258	129
45,000	50,000	270	135
50,000	55,000	280	140
55,000	60,000	290	145
60,000	65,000	300	150
65,000	70,000	310	155
70,000	75,000	320	160
75,000	80,000	330	165
80,000	85,000	340	170
85,000	90,000	350	175
90,000	95,000	360	180
95,000	100,000	370	185
100,000	110,000	380	195
110,000	120,000	410	205
120,000	130,000	430	215
130,000	140,000	450	225
140,000	150,000	470	235
150,000	160,000	490	245
160,000	170,000	510	255
170,000	180,000	530	265
180,000	190,000	550	275
190,000	200,000	570	285
200,000	210,000	590	295
210,000	230,000	630	315
230,000	250,000	670	335
250,000	275,000	720	360
275,000	300,000	770	385

Note 1. "Natural barricade" means natural features of the ground, such as hills, or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the magazine when the trees are bare of leaves.

Note 2. "Artificial barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 feet.

Note 3. "Barricaded" means that a building containing explosives is effectually screened from a magazine, building, railway, or highway, either by a natural barricade, or by an artificial barricade of such height that a straight line from the top of any sidewall of the building containing explosives to the eave line of any magazine, or building, or to a point 12 feet above the center of a railway or highway, will pass through such intervening natural or artificial barricade.

Note 4. This table applies only to the manufacture and permanent storage of commercial explosives. It is not applicable to transportation of explosives, or any handling or temporary storage necessary or incident thereto. It is not intended to apply to bombs, projectiles, or other heavily encased explosives.

(4) WAC 296-52-461(1) does not apply to:

(a) Stocks of small arms ammunition, propellant-actuated power cartridges, small arms ammunition primers in quantities of less than 750,000, smokeless propellants in quantities of less than 150 pounds or black powder, as used in muzzle loading firearms, in quantities of less than 25 pounds;

(b) Explosive-actuated power devices when in quantities less than 50 pounds net weight of explosives;

(c) Fuse lighters and fuse igniters;

(d) Safety fuses other than cordeau detonant fuses.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-477, filed 5/6/86.]

WAC 296-52-481 Blasting agents.

TABLE H-22
TABLE OF RECOMMENDED SEPARATION DISTANCES OF AMMONIUM NITRATE AND BLASTING AGENTS FROM EXPLOSIVES OR BLASTING AGENTS[1] [6]

Donor weight		Minimum separation distance of receptor when barricaded[2] (ft.)		Minimum thickness of artificial barricades[5] (in.)
Pounds over	Pounds not over	Ammonium nitrate[3]	Blasting agent[4]	
	100	3	11	12
100	300	4	14	12
300	600	5	18	12
600	1,000	6	22	12
1,000	1,600	7	25	12
1,600	2,000	8	29	12
2,000	3,000	9	32	15
3,000	4,000	10	36	15
4,000	6,000	11	40	15
6,000	8,000	12	43	20
8,000	10,000	13	47	20
10,000	12,000	14	50	20
12,000	16,000	15	54	25
16,000	20,000	16	58	25
20,000	25,000	18	65	25
25,000	30,000	19	68	30
30,000	35,000	20	72	30
35,000	40,000	21	76	30
40,000	45,000	22	79	35
45,000	50,000	23	83	35
50,000	55,000	24	86	35
55,000	60,000	25	90	35
60,000	70,000	26	94	40
70,000	80,000	28	101	40
80,000	90,000	30	108	40
90,000	100,000	32	115	40
100,000	120,000	34	122	50
120,000	140,000	37	133	50

Donor weight		Minimum separation distance of receptor when barricaded[2] (ft.)		Minimum thickness of artificial barricades[5] (in.)
Pounds over	Pounds not over	Ammonium nitrate[3]	Blasting agent[4]	
140,000	160,000	40	144	50
160,000	180,000	44	158	50
180,000	200,000	48	173	50
200,000	220,000	52	187	60
220,000	250,000	56	202	60
250,000	275,000	60	216	60
275,000	300,000	64	230	60

Notes to table of recommended separation distances of ammonium nitrate and blasting agents from explosives or blasting agents:

Note 1. These distances apply to the separation of stores only. Table H–21 shall be used in determining separation distances from inhabited buildings, passenger railways, and public highways.

Note 2. When the ammonium nitrate and/or blasting agent is not barricaded, the distances shown in the table shall be multiplied by six. These distances allow for the possibility of high velocity metal fragments from mixers, hoppers, truck bodies, sheet metal structures, metal containers, and the like which may enclose the "donor." Where storage is in bullet–resistant magazines recommended for explosives or where the storage is protected by a bullet–resistant wall, distances, and barricade thicknesses in excess of those prescribed in Table H–21 are not required.

Note 3. The distances in the table apply to ammonium nitrate that passes the insensitivity test prescribed in the definition of ammonium nitrate fertilizer promulgated by the National Plant Food Institute*; and ammonium nitrate failing to pass said test shall be stored at separation distances determined by competent persons. (*Definition and Test Procedures for Ammonium Nitrate Fertilizer, National Plant Food Institute, November 1964.)

Note 4. These distances apply to nitro–carbo–nitrates and blasting agents which pass the insensitivity test prescribed in the United States Department of Transportation (DOT) regulations.

Note 5. Earth, or sand dikes, or enclosures filled with the prescribed minimum thickness of earth or sand are acceptable artificial barricades. Natural barricades, such as hills or timber of sufficient density that the surrounding exposures which require protection cannot be seen from the "donor" when the trees are bare of leaves, are also acceptable.

Note 6. When the ammonium nitrate must be counted in determining the distances to be maintained from inhabited buildings, passenger railways and public highways, it may be counted at one–half its actual weight because its blast effect is lower.

Note 7. Guide to use of table of recommended separation distances of ammonium nitrate and blasting agents from explosives or blasting agents.

(a) Sketch location of all potential donor and acceptor materials together with the maximum mass of material to be allowed in that vicinity. (Potential donors are high explosives, blasting agents, and combination of masses of detonating materials. Potential acceptors are high explosives, blasting agents, and ammonium nitrate.)

(b) Consider separately each donor mass in combination with each acceptor mass. If the masses are closer than table allowance (distances measured between nearest edges), the combination of masses becomes a new potential donor of weight equal to the total mass. When individual masses are considered as donors, distances to potential acceptors shall be measured between edges. When combined masses within propagating distance of each other are considered as a donor, the appropriate distance to the edge of potential acceptors shall be computed as a weighted distance from the combined masses:

(i) Calculation of weighted distance from combined masses:

Let M_2, M_3 .... M_n be donor masses to be combined.

M_1 is a potential acceptor mass.

D_{12} is distance from M_1 to M_2 (edge to edge).

D_{13} is distance from M_1 to M_3 (edge to edge), etc.

To find weighted distance [$D_{1(2,3\ldots n)}$ from combined masses to M_1, add the products of the individual masses and distances and divide the total by the sum of the masses thus:

$$D_{1(2,3,\ldots n)} = \frac{M_2xD_{12}+M_3xD_{13}\ldots+M_nxD_{1n}}{M_2+M_3\ldots+M_n}$$

Propagation is possible if either an individual donor mass is less than the tabulated distance from an acceptor or a combined mass is less than the weighted distance from an acceptor.

(c) In determining the distances separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H–21), the sum of all masses which may propagate (i.e., lie at distances less than prescribed in the Table) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only 50 percent of its weight shall be used because of its reduced blast effects. In applying Table H–21 to distances from highways, railroads, and inhabited buildings, distances are measured from the nearest edge of potentially explodable material as prescribed in Table H–21, Note 5.

(d) When all or part of a potential acceptor comprises Explosives Class A as defined in DOT regulations, storage in bullet–resistant magazines is required. Safe distances to stores in bullet–resistant magazines may be obtained from the intermagazine distances prescribed in Table H–21.

(e) Barricades must not have line–of–sight openings between potential donors and acceptors which permit blast or missiles to move directly between masses.

(f) Good housekeeping practices shall be maintained around any bin containing ammonium nitrate or blasting agent. This includes keeping weeds and other combustible materials cleared within 25 feet of such bin. Accumulation of spilled product on the ground shall be prevented.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86–10–044 (Order 86–24), § 296–52–481, filed 5/6/86.]

WAC 296–52–485 Quantity and distance tables for manufacturing buildings. All explosives manufacturing buildings shall be located one from the other and from other buildings on explosives manufacturing plants in which persons are regularly employed, and all magazines shall be located from factory buildings and buildings on explosives plants in which persons are regularly employed, in conformity with the intraexplosives plant quantity and distance table below.

TABLE H-23

EXPLOSIVES Pounds Over	Pounds Not Over	Distance Feet
		Separate Building or Within Substantial Dividing Walls
.....	10	
10	25	40
25	50	60
50	100	80
100	200	100
200	300	120
300	400	130
400	500	140
500	750	160
750	1,000	180
1,000	1,500	210
1,500	2,000	230
2,000	3,000	260
3,000	4,000	280
4,000	5,000	300
5,000	6,000	320
6,000	7,000	340
7,000	8,000	360
8,000	9,000	380
9,000	10,000	400
10,000	12,500	420
12,500	15,000	450
15,000	17,500	470
17,500	20,000	490
20,000	25,000	530
25,000	30,000	560
30,000	35,000	590
35,000	40,000	620
40,000	45,000	640
45,000	50,000	660
50,000	55,000	680
55,000	60,000	700
60,000	65,000	720
65,000	70,000	740
70,000	75,000	770
75,000	80,000	780
80,000	85,000	790
85,000	90,000	800
90,000	95,000	820
95,000	100,000	830
100,000	125,000	900
125,000	150,000	950
150,000	175,000	1,000
175,000	200,000	1,050
200,000	225,000	1,100
225,000	250,000	1,150
250,000	275,000	1,200
275,000	300,000	1,250

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-485, filed 5/6/86.]

PART E--EXPLOSIVES TRANSPORTATION

WAC 296-52-489 Transportation. (1) The transportation of explosives by vehicle on public highways shall be administered by the United States Department of Transportation, CFR 49-1978, Parts 100 through 199, and the Washington state patrol under RCW 46-.48.170. The following sections cover the transportation of explosives on the job site.

(a) No employee shall be allowed to smoke, carry matches or any other flame-producing device, or carry any firearms or loaded cartridges while in or near a motor vehicle transporting explosives; or drive, load, or unload such vehicle in a careless or reckless manner.

(b) Explosives shall not be carried on any vehicle while vehicle is being used to transport workers other than driver and two persons.

(c) Explosives shall be transferred from the disabled vehicle to another, only when proper and qualified supervision is provided.

(2) Transportation vehicles. Vehicles used for transporting explosives shall be strong enough to carry the load without difficulty and be in good mechanical condition. If vehicles do not have a closed body, the body shall be covered with a flameproof and moisture-proof tarpaulin or other effective protection against moisture and sparks. All vehicles used for the transportation of explosives shall have tight floors and any exposed spark-producing metal on the inside of the body shall be covered with wood or other nonsparking materials to prevent contact with packages of explosives. Packages of explosives shall not be loaded above the sides of an open-body vehicle.

(3) Vehicles shall be placarded and displayed as specified by the United States Department of Transportation, CFR 49-1981, Parts 100 through 199.

(4)(a) Each motor vehicle used for transporting explosives shall be equipped with a minimum of two extinguishers, each having a rating of at least 10-BC.

(i) Only extinguishers listed or approved by Underwriters Laboratories, Inc., or the Factor Mutual Engineering Corp. shall be deemed suitable for use on explosives-carrying vehicles.

(ii) Extinguishers shall be filled and ready for immediate use and readily available. Extinguishers shall be examined periodically by a competent person.

(b) A motor vehicle used for transporting explosives shall be given the following inspection to determine that it is in proper condition for safe transportation of explosives:

(i) Fire extinguishers shall be filled and in working order.

(ii) All electrical wiring shall be completely protected and securely fastened to prevent short-circuiting.

(iii) Chassis, motor, pan, and underside of body shall be reasonably clean and free of excess oil and grease.

(iv) Fuel tank and feedline shall be secure and have no leaks.

(v) Brakes, lights, horn, windshield wipers, and steering apparatus shall function properly.

(vi) Tires shall be checked for proper inflation and defects.

(vii) The vehicle shall be in proper condition in every other respect and acceptable for handling explosives.

(5) Operation of transportation vehicles.

(a) Vehicles transporting explosives shall only be driven by and be in the charge of a licensed driver who is not less than twenty-one years of age, physically fit, careful, capable, reliable, able to read and write the English language, and not addicted to the use, or under

the influence of intoxicants, narcotics, or other dangerous drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others. They shall be familiar with the traffic regulations, state laws, and the provisions of this section.

(b) Except under emergency conditions, no vehicle transporting explosives shall be parked before reaching its destination, even though attended.

(c) Every motor vehicle transporting any quantity of Class A or Class B explosives shall, at all times, be attended by a driver or other attendant of the motor carrier. This attendant shall have been made aware of the class of the explosive material in the vehicle and of its inherent dangers, and shall have been instructed in the measures and procedures to be followed in order to protect the public from those dangers. He shall have been made familiar with the vehicle he is assigned, and shall be trained, supplied with the necessary means, and authorized to move the vehicle when required.

(i) For the purpose of this subdivision, a motor vehicle shall be deemed "attended" only when the driver or other attendant is physically on or in the vehicle, or has the vehicle within his field of vision and can reach it quickly and without any kind of interference; "attended" also means that the driver or attendant is awake, alert, and not engaged in other duties or activities which may divert his attention from the vehicle.

(ii) However, an explosive-laden vehicle may be left unattended if parked within a securely fenced or walled area properly barricaded with all gates or entrances locked where parking of such vehicle is otherwise permissible, or at a magazine site established solely for the purpose of storing explosives.

(d) No spark-producing metal, spark-producing tools, oils, matches, firearms, electric storage batteries, flammable substances, acids, oxidizing materials, or corrosive compounds shall be carried in the body of any motor truck and/or vehicle transporting explosives, unless the loading of such dangerous articles and the explosives comply with U.S. Department of Transportation regulations.

(e) Vehicles transporting explosives shall avoid congested areas and heavy traffic.

(f) Delivery shall only be made to authorized persons and into authorized magazines of authorized temporary storage or handling area.

(6) Transporting of explosives and blasting caps or electric blasting caps in the same vehicle. Blasting caps, blasting caps with safety fuse, blasting caps with metal clad mild detonating fuse and/or electric blasting caps may be transported in the same vehicle with other explosives, provided the following condition is complied with:

The top, lid or door, sides and bottom of each container must be of laminate construction consisting of A/C grade or better exterior plywood, solid hardwood, asbestos board or sheetrock and sheet metal. In order of arrangement, from inside to outside, the laminate must consist of the following with the minimum thickness of each lamination as indicated: 1/4-inch plywood, 1-inch solid hardwood, 1/2-inch plywood, 1/2-inch sheetrock or 1/4-inch asbestos board, and 22-gauge sheet metal constructed inside to outside in that order.

(7) When primers are made up at a central primer house for use in high speed tunneling, the following shall apply:

(a) Only enough primers shall be made up for one day's usage.

(b) The primers shall be placed in separate containers or bins, categorized by degree of delay in such a manner so as to prevent them from physical impact.

(c) Explosives carried in the same magazine shall be separated by 1/4-inch steel, covered on each side by four inches of hardwood planking, or equivalent.

(d) Only a state approved powder car or vehicle shall be used underground.

(e) The number of primers for one round will be removed from the state approved car or vehicle at the face or heading after the drilling has been completed and the holes readied for loading. After loading the charge, the powder car or vehicle will be withdrawn from the tunnel.

(f) Wires on electric caps shall be kept shunted until wired to the bus wires.

(g) The powder car or vehicle shall be inspected daily for lights, brakes and external damage to electrical circuitry. The electrical system shall be checked weekly to detect any failures that may constitute an electrical hazard and a written record of such inspection shall be kept on file for the duration of the job.

(8) When explosives are carried to the blasting site from the main storage magazines by the blaster or helper:

(a) Special insulated containers shall be used for this purpose, either boxes or bags, one container for explosives and one for detonators.

(b) Detonators or explosives shall never be carried in pockets of clothing.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-489, filed 5/6/86.]

PART F--USE OF EXPLOSIVES

WAC 296-52-493 Use of explosives and blasting agents. (1) General provisions.

(a) While explosives are being handled or used, smoking, matches, or any other source of fire or flame shall not be allowed within 100 feet of the blast site. No person shall be allowed to handle explosives while under the influence of intoxicating liquors, narcotics, or other dangerous drugs. This rule does not apply to persons taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the worker or others.

(b) Original containers or day box magazines shall be used for taking detonators and other explosives from storage magazines to the blast site.

(c) When blasting is done in congested areas or in close proximity to a structure, railway, or highway or any other installation that may be damaged, the blast shall be covered before firing with a mat or material

that is capable of preventing fragments from being thrown.

(d) Persons authorized to prepare explosive charges or conduct blasting operations shall use every reasonable precaution, including but not limited to warning signals, flags and barricades.

(e) Blasting operations shall be conducted during daylight hours whenever possible.

(f) Whenever blasting is being conducted in the vicinity of gas, electric, water, fire alarm, telephone, telegraph, and steam utilities, the user (blaster) shall notify the appropriate representatives of such utilities at least twenty-four hours in advance of blasting, specifying the location and intended item of such blasting. Verbal notice shall be confirmed with written notice.

(g) Due precautions shall be taken to prevent accidental discharge of electric blasting caps from current induced by radar, radio transmitters, lightning, adjacent powerlines, dust storms, or other sources of extraneous electricity. These precautions shall include:

(i) The suspension of all blasting operations and removal of persons from the blast site during the approach and progress of an electric storm.

(ii) The posting of signs, warning against the use of mobile radio transmitters, on all roads shall be in accordance with the applicable provisions of the *American National Standards Institute D6.1-1971, Manual on Uniform Traffic Control Devices for Streets and Highways*, as amended by *Washington State Department of Highways Manual M24-01 (HT)*, (February 22, 1972).

(iii) Ensuring that mobile radio transmitters which are less than 100 feet away from electric blasting caps, when the caps are in other than original containers, shall be deenergized and effectively locked.

(iv) Compliance with the recommendations of The Institute of the Makers of Explosives (IME) with regard to blasting in the vicinity of radio transmitters as stipulated in *Radio Frequency Energy—A Potential Hazard in the Use of Electric Blasting Caps*, IME Publication No. 20, September 1981.

(v) When electric blasting caps are being used in blasting operations in the proximity of fixed radio transmitters, the following table of distances must be observed, unless it is determined by designated test procedures that there is not sufficient radio frequency energy present to create a hazard. The test procedure shall be to attach a No. 47 radio pilot lamp in place of the cap in the blasting circuit progressively as the circuit is connected, starting with the initial hole. In the event the lamp glows, the length of the wires connecting the circuit shall be altered by adding or cutting off wire until the lamp does not glow. A radio frequency field strength meter may be used in lieu of the test lamp.

Electromagnetic radiation. Blasting operations or storage of electrical detonators shall be prohibited in vicinity of operating radio frequency (RF) transmitter stations except where the clearances given below can be observed.

Transmitter Power Except FM Mobile (Watts)	Minimum Distance (Feet)
5 – 25	100
25 – 50	150
50 – 100	220
100 – 250	350
250 – 500	450
500 – 1,000	650
1,000 – 2,500	1,000
2,500 – 5,000	1,500
5,000 – 10,000	2,200
10,000 – 25,000	3,500
25,000 – 50,000	5,000
50,000 –100,000	7,000

Transmitter Power FM Mobile (Watts)	Minimum Distance (Feet)
1 – 10	5
10 – 30	10
30 – 60	15
60 – 250	30

(vi) When necessary to perform blasting operations at distances less than those shown in table, detonating type fuse or other approved type systems shall be used.

(h) No fire shall be fought where the fire is in imminent danger of contact with explosives. All employees shall be removed to a safe area and the fire area guarded against intruders.

(i) Electric detonators shall be shunted until wired into the blasting circuit.

(j) Explosives shall not be handled near open flames, uncontrolled sparks or open electric circuits.

(k) Delivery and issue of explosives shall only be made by and to authorized persons and into authorized magazines or approved temporary storage or handling area.

(l) All loading and firing shall be directed and supervised by licensed persons thoroughly experienced in this field.

(m) The employer shall permit only persons having proof of valid safety explosive training to handle explosives at the blasting site.

(2) Storage at use sites.

(a) Empty boxes and paper and fiber packing materials which have previously contained high explosives shall not be used again for any purpose, but shall be destroyed by burning at an approved isolated location out of doors, and no person shall be nearer than 100 feet after the burning has started.

(b) When opening kegs or wooden cases, no sparking metal tools shall be used; wooden wedges and either wood, fiber or rubber mallets shall be used. Nonsparking metallic slitters may be used for opening fiberboard cases.

(c) Should cartridges or packages of explosives show signs of discoloration or deterioration, the manufacturer or the department shall be notified. Such explosives must be carefully set aside and properly disposed of.

(3) Loading of explosives or blasting agents.

(a) Procedures that permit safe and efficient loading shall be established before loading is started.

(b) All drill holes shall be sufficiently large to admit freely the insertion of the cartridges of explosives.

(c) Tamping shall be done only with wood rods or with approved plastic tamping poles without exposed metal parts, but nonsparking metal connectors may be used for jointed poles. Violent tamping shall be avoided. The primer shall never be tamped.

(d) No holes shall be loaded except those to be fired in the next round of blasting. After loading, all remaining explosives and detonators shall be immediately returned to an authorized magazine.

(e) Drilling shall not be started until all remaining butts of old holes are examined for unexploded charges, and if any are found, they shall be refired before work proceeds.

(f) When a charge of explosives has been exploded in a bore hole to enlarge or "spring" it, an interval of at least two hours must be allowed to pass before an additional charge of explosives can be loaded into the hole.

Note: There may be an exception made to this rule provided the sprung hole is thoroughly wet down with water before it is loaded.

(g) No person shall be allowed to deepen drill holes which have contained explosives or blasting agents.

(h) No explosives or blasting agents shall be left unattended unless stored in a licensed magazine.

(i) Users (blasters) shall not load, store or use explosives closer than the length of the steel being used for drilling and in no event nearer than fifty feet of drilling operations.

(j) Machines and all tools not used for loading explosives into bore holes shall be removed from the immediate location of holes being loaded with explosives. Equipment shall not be operated within 50 feet of loaded holes except when equipment is needed to add burden, mats or tracking of drills out of the loading area.

(k) Powerlines and portable electric cables for equipment being used shall be kept a safe distance from explosives or blasting agents being loaded into drill holes. Cables in the proximity of the blast area shall be deenergized and locked out.

(l) Holes shall not be drilled where there is danger of intersecting a charged or misfired hole.

(m) No explosives for underground operations other than those in Fume Class 1, as set forth by the Institute of Makers of Explosives, shall be used; however, explosives complying with the requirements of Fume Class 2 and Fume Class 3 may be used if adequate ventilation has been provided.

(n) Warning signs, indicating a blast area, shall be maintained at all approaches to the blast area. The warning sign lettering shall not be less that 4 inches in height on a contrasting background. All loaded stumps must be marked for identification on logging sites.

(o) A bore hole shall never be sprung when it is adjacent to or near a hole which has been loaded. Batteries shall not be used for springing holes.

(p) No loaded holes shall be left unattended.

(q) The user (blaster) shall keep an accurate, up–to–date record of explosives, blasting agents, and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the operation.

(r) When loading blasting agents pneumatically over electric blasting caps, semiconductive delivery hose shall be used and the equipment shall be bonded and grounded.

(4) Initiation of explosive charges – electric blasting.

(a) Only electric blasting caps shall be used for blasting operations in congested districts, or on highways, or adjacent to highways open to traffic, except where sources of extraneous electricity make such use dangerous. Blasting cap leg wires shall be kept short–circuited (shunted) until they are connected into the circuit for firing.

(b) Before adopting any system of electrical firing, the user (blaster) shall conduct a thorough survey for extraneous currents, and all dangerous currents shall be eliminated before any holes are loaded.

(c) In any single blast using electric blasting caps, all caps shall be of the same style or function and be of the same manufacture.

(d) Electric blasting shall be carried out by using blasting circuits or power circuits in accordance with the electric blasting cap manufacturer's recommendations.

(e) The firing line shall be checked with an approved testing device at the terminals before being connected to the blasting machine or other power source.

(f) The circuit including all caps shall be tested with an approved testing device before being connected to the firing line.

(g) When firing a circuit of electric blasting caps, care shall be exercised to ensure that an adequate quantity of delivered current is available, in accordance with the manufacturer's recommendations.

(h) Connecting wires and lead wires shall be insulated single solid wires of sufficient current–carrying capacity, and shall not be less than twenty gauge (American wire gauge) solid core insulated wire.

(i) Firing line or leading wires shall be solid single wires of sufficient current–carrying capacity, and shall be not less than fourteen gauge (American wire gauge) solid core insulated wire. Bus wires – depends on the size of the blast, fourteen gauge (American wire gauge) copper is recommended.

(j) The ends of lead wires which are to be connected to a firing device shall be shorted by twisting them together or otherwise connecting them before they are connected to the leg wires or connecting wires, and they shall be kept in the possession of the person who is doing the loading until loading is completed and the leg wires attached. Lead wires shall not be attached to the firing device until the blaster is ready to fire the shot and must be attached by the user (blaster) themselves.

(k) The ends of the leg wires on electric detonators shall be shorted in a similar manner and not separated until all holes are loaded and the loader is ready to connect the leg wires to the connecting wires or lead wires.

(l) When firing electrically, the insulation on all firing lines shall be adequate and in good condition.

(m) A power circuit used for firing electric blasting caps shall not be grounded.

(n) In underground operations when firing from a power circuit, a safety switch shall be placed at intervals in the permanent firing line. This switch shall be made so it can be locked only in the "off" position and shall be provided with a short–circuiting arrangement of the firing lines to the cap circuit.

(o) In underground operations there shall be a "lightning" gap of at least 5 feet in the firing system ahead of the main firing switch; that is, between this switch and the source of power. This gap shall be bridged by a flexible jumper cord just before firing the blast.

(p) When firing from a power circuit, the firing switch shall be locked in the open or "off" position at all times, except when firing. It shall be so designed that the firing lines to the cap circuit are automatically short–circuited when the switch is in the "off" position. Keys to this switch shall be entrusted only to the user (blaster).

(q) Blasting machines shall be in good condition and the efficiency of the machine shall be tested periodically to make certain that it can deliver power at its rated capacity.

(r) When firing with blasting machines, the connections shall be made as recommended by the manufacturer of the electric blasting caps used.

(s) The number of electric blasting caps connected to a blasting machine shall not be in excess of its rated capacity. Furthermore, in primary blasting, a series circuit shall contain no more caps than the limits recommended by the manufacturer of the electric blasting caps in use.

(t) The user (blaster) shall be in charge of the blasting machines, and no other person shall connect the leading wires to the machine.

(u) Users (blasters), when testing circuits to charged holes, shall use only blasting testers especially designed for this purpose.

(v) Whenever the possibility exists that a leading line or blasting wire might be thrown over a live powerline by the force of an explosion, care shall be taken to see that the total length of wires are kept too short to hit the lines, or that the wires are securely anchored to the ground. If neither of these requirements can be satisfied, a nonelectric system shall be used.

(w) In electrical firing, only the person making leading wire connections shall fire the shot. All connections shall be made from the bore hole back to the source of firing current, and the leading wires shall remain shorted and not be connected to the blasting machine or other source of current until the charge is to be fired.

(x) After firing an electric blast from a blasting machine, the leading wires shall be immediately disconnected from the machine and short–circuited.

(y) When electric blasting caps have been used, workers shall not return to misfired holes for at least thirty minutes.

(5) Use of safety fuse.

(a) A fuse that is deteriorated or damaged in any way shall not be used.

(b) The hanging of fuse on nails or other projections which will cause a sharp bend to be formed in the fuse is prohibited.

(c) Before capping safety fuse, a short length shall be cut from the end of the supply reel so as to assure a fresh cut end in each blasting cap.

(d) Only a cap crimper of approved design shall be used for attaching blasting caps to safety fuse. Crimpers shall be kept in good repair and accessible for use.

(e) No unused cap or short capped fuse shall be placed in any hole to be blasted; such unused detonators shall be removed from the working place and disposed of or stored in licensed magazine.

(f) No fuse shall be capped, or primers made up, in any magazine or near any possible source of ignition.

(g) Capping of fuse and making of primers shall only be done in a place selected for this purpose and at least one hundred feet distant from any storage magazine.

(h) Fuse must be cut long enough to reach beyond the collar of the bore hole and in no case less than three feet. When shooting choker holes, not less than three feet of fuse shall be used.

(i) At least two persons shall be present when multiple cap and fuse blasting is done by hand lighting methods.

(j) Not more than 12 fuses shall be lighted by each blaster when hand lighting devices are used. However, when two or more safety fuses in a group are lighted as one by means of igniter cord, or other similar fuse–lighting devices, they may be considered as one fuse.

(k) The so–called "drop fuse" method of dropping or pushing a primer or any explosive with a lighted fuse attached is prohibited.

(l) Cap and fuse shall not be used for firing mudcap charges unless charges are separated sufficiently to prevent one charge from dislodging other shots in the blast.

(m) When blasting with safety fuses, consideration shall be given to the length and burning rate of the fuse. Sufficient time, with a margin of safety, shall always be provided for the blaster to reach a place of safety.

(n) The burning rate of the safety fuse in use at any time shall be measured, posted in conspicuous locations, and brought to the attention of all workers concerned with blasting. No fuse shall be used that burns faster than one foot in forty seconds or slower than one foot in fifty–five seconds.

(o) For use in wet places the joint between the cap and fuse shall be waterproofed with a compound prepared for this purpose.

(p) In making up primers only nonsparking skewers shall be used for punching the hole in the cartridge to insert the capped fuse.

(q) Only sufficient primers for one day's use shall be made up at one time. They shall be stored in a box type magazine in which no other explosives are stored.

(r) Any loose cartridges of explosives, detonators, primers and capped fuse unused at the end of the shift shall be returned to their respective magazines and locked up.

(6) Use of detonating cord.

(a) Care shall be taken to select a detonating cord consistent with the type and physical condition of the bore hole and stemming and the type of explosives used.

(b) Detonating cord shall be handled and used with the same respect and care given other explosives.

(c) For quantity and distance purposes detonating fuse up to 60 grains per foot should be calculated as equivalent to 9 lbs. of high explosives per 1,000 feet. Heavier cord loads should be rated proportionately.

(d) If using a detonating type cord for blasting the double–trunk–line or loop systems shall be used.

(e) Trunk lines in multiple–row blasts shall make one or more complete loops, with crossties between loops at intervals of not over two hundred feet.

(f) All detonating cord knots shall be tight and all connections shall be kept at right angles to the trunk lines.

(g) The line of detonating cord extending out of a bore hole or from a charge shall be cut from the supply spool before loading the remainder of the bore hole or placing additional charges.

(h) Detonating cord shall be handled and used with care to avoid damaging or severing the cord during and after loading and hooking–up.

(i) Detonating cord connections shall be competent and positive in accordance with approved and recommended methods. Knot–type or other cord–to–cord connections shall be made only with detonating cord in which the explosive core is dry.

(j) All detonating cord trunklines and branchlines shall be free of loops, sharp kinks, or angles that direct the cord back toward the oncoming line of detonation.

(k) All detonating cord connections shall be inspected before firing the blast.

(l) When detonating cord millisecond–delay connectors or short–interval–delay electric blasting caps are used with detonating cord, the practice shall conform strictly to the manufacturer's recommendations.

(m) When connecting a blasting cap or an electric blasting cap to detonating cord, the cap shall be taped or otherwise attached securely along the side or the end of the detonating cord, with the end of the cap containing the explosive charge pointed in the direction in which the detonation is to proceed.

(n) Detonators for firing the trunkline shall not be brought to the loading area nor attached to the detonating cord until everything else is in readiness for the blast.

(7) Firing the blast.

(a) A code of blasting signals equivalent to Table T–1 shall be posted on one or more conspicuous places at the operation, and all employees shall be required to familiarize themselves with the code and conform to it. Danger signs shall be placed at suitable locations.

(b) All charges shall be covered with blasting mats before firing, where blasting may cause injury or damage by flying rock or debris.

(c) Before a blast is fired, a loud warning signal shall be given by the blaster in charge, who has made certain that all surplus explosives are in a safe place and all employees, vehicles, and equipment are at a safe distance, or under sufficient cover.

(d) Flagmen shall be safely stationed on highways which pass through the danger zone so as to stop traffic during blasting operations.

(e) It shall be the duty of the blaster to fix the time of blasting.

(f) Before firing an underground blast, warning shall be given, and all possible entries into the blasting area, and any entrances to any working place where a drift, raise, or other opening is about to hole through, shall be carefully guarded. The blaster shall make sure that all employees are out of the blast area before firing a blast.

TABLE T–1

WARNING SIGNAL	— A 1–minute series of long blasts 5 minutes prior to blast signal.
BLAST SIGNAL	— A series of short blasts 1 minute prior to the shot.
ALL CLEAR SIGNAL	— A prolonged blast following the inspection of blast area.

(8) Inspection after blasting.

(a) Immediately after the blast has been fired, the firing line shall be disconnected from the blasting machine, or where power switches are used, they shall be locked open or in the off position.

(b) Sufficient time shall be allowed, not less than fifteen minutes in tunnels, for the smoke and fumes to leave the blasted area before returning to the shot. An inspection of the area and the surrounding rubble shall be made by the user (blaster) to determine if all charges have been exploded before employees are allowed to return to the operation, and in tunnels, after the muck pile has been wetted down.

(9) Misfires.

(a) If a misfire is found, the user (blaster) shall provide proper safeguards for excluding all employees from the danger zone.

(b) No other work shall be done except that necessary to remove the hazard of the misfire and only those employees necessary to do the work shall remain in the danger zone.

(c) No attempt shall be made to extract explosives from any charged or misfired hole; a new primer shall be put in and the hole reblasted. If refiring of the misfired hole presents a hazard, the explosives may be removed by washing out with water or, where the misfire is under water, blown out with air.

(d) If there are any misfires while using cap and fuse, all employees shall remain away from the charge for at

least one hour. Misfires shall be handled under the direction of the person in charge of the blasting.

(e) When electric blasting caps have been used, workers shall not return to misfired holes for at least thirty minutes. All wires shall be carefully traced and a search made for unexploded charges.

(f) If explosives are suspected of burning in a hole, all persons in the endangered area shall move to a safe location and no one shall return to the hole until the danger has passed, but in no case within one hour.

(g) No drilling, digging, or picking shall be permitted until all missed holes have been detonated or the authorized representative has approved that work can proceed.

(10) Underwater blasting.

(a) A user (blaster) shall conduct all blasting operations.

(b) Loading tubes and casings of dissimilar metals shall not be used because of possible electric transient currents from galvanic action of the metals and water.

(c) Only water–resistant blasting caps and detonating cords shall be used for all underwater blasting. Loading shall be done through a nonsparking metal loading tube when tube is necessary.

(d) No blast shall be fired while any vessel under way is closer than 1,500 feet to the blasting area. Those on board vessels or craft moored or anchored within 1,500 feet shall be notified before a blast is fired.

(e) No blast shall be fired while any swimming or diving operations are in progress in the vicinity of the blasting area. If such operations are in progress, signals and arrangements shall be agreed upon to assure that no blast shall be fired while any persons are in the water.

(f) Blasting flags shall be displayed.

(g) The storage and handling of explosives aboard vessels used in underwater blasting operations shall be according to provisions outlined herein on handling and storing explosives.

(h) When more than one charge is placed under water, a float device shall be attached to an element of each charge in such manner that it will be released by the firing. Misfires shall be handled in accordance with the requirements of WAC 296-52-493(9).

(11) Blasting in excavation work in pressurized air locks.

(a) Detonators and explosives shall not be stored or kept in tunnels, shafts, or caissons. Detonators and explosives for each round shall be taken directly from the magazines to the blasting zone and immediately loaded. Detonators and explosives left over after loading a round shall be removed from the working chamber before the connecting wires are connected up.

(b) When detonators or explosives are brought into an air lock, no employee except the powderman, user (blaster), lock tender and the employees necessary for carrying, shall be permitted to enter the air lock. No material, supplies, or equipment shall be brought through with the explosives.

(c) Primers, detonators and explosives shall be taken separately into pressure working chambers.

(d) The user (blaster) or powderman shall be responsible for the receipt, unloading, storage, and on–site transportation of explosives and detonators.

(e) All metal pipes, rails, air locks, and steel tunnel lining shall be electrically bonded together and grounded at or near the portal or shaft, and such pipes and rails shall be cross–bonded together at not less than 1,000–foot intervals throughout the length of the tunnel. In addition, each air supply pipe shall be grounded at its delivery end.

(f) The explosives suitable for use in wet holes shall be water–resistant and shall be Fume Class 1, or other approved explosives.

(g) When tunnel excavation in rock face is approaching mixed face, and when tunnel excavation is in mixed face, blasting shall be performed with light charges and with light burden on each hole. Advance drilling shall be performed as tunnel excavation in rock face approaches mixed face, to determine the general nature and extent of rock cover and the remaining distance ahead to soft ground as excavation advances.

(12) Vibration and damage control. Blasting operations in or adjacent to cofferdams, piers, underwater structures, buildings, structures, or other facilities shall be carefully planned with full consideration for all forces and conditions involved.

(13) Black blasting powder shall not be used for blasting except when a desired result cannot be obtained with another type of explosive such as in quarrying certain types of dimension stone.

(14) In the use of black blasting powder:

(a) Containers shall not be opened in, or within fifty feet of any magazine; within any building in which a fuel–fired or exposed–element electric heater is in operation; where electrical or incandescent–particle sparks could result in powder ignition; or within fifty feet of any open flame.

(b) Granular powder shall be transferred from containers only by pouring.

(c) Spills of granular powder shall be cleaned up promptly with nonsparking equipment, contaminated powder shall be put into a container of water and its content disposed of promptly after the granules have disintegrated, or the spill area shall be flushed with a copious amount of water to completely disintegrate the granules.

(d) Containers of powder shall be kept securely closed at all times other than when the powder is being transferred from or into a container.

(e) Containers of powder transported by vehicles shall be in a wholly enclosed cargo space.

(f) Misfires shall be disposed of by:

(i) Washing the stemming and powder charge from the bore hole, and

(ii) Removal and disposal of the initiator as a damaged explosive.

(iii) Bore holes of shots that fire but fail to break, or fail to break promptly, shall not be recharged for at least twelve hours.

(15) No person shall store, handle, or transport explosives or blasting agents when such storage, handling, and

transportation of explosives or blasting agents constitutes an undue hazard to life.

(16) It shall be unlawful for any person to abandon explosives or explosive substances.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-493, filed 5/6/86.]

WAC 296-52-497 Blasting agents. (1) General. Unless otherwise set forth in this section, blasting agents, excluding water gels, shall be transported, stored, and used in the same manner as explosives. Water gels are covered in WAC 296-52-501.

(2) Fixed location mixing.

(a) Buildings or other facilities used for mixing blasting agents shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H-21. In determining the distance separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H-21), the sum of all masses which may propagate (i.e., lie at distances less than prescribed in Table H-22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only fifty percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the mixing of blasting agents shall conform to the requirements of this section.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) All fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

(iv) The building shall be well ventilated.

(v) Heating units which do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be located outside the mixing building.

(vi) All internal-combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a firewall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Equipment used for mixing blasting agents shall conform to the requirements of this subsection.

(i) The design of the mixer shall minimize the possibility of frictional heating, compaction, and especially confinement. All bearings and drive assemblies shall be mounted outside the mixer and protected against the accumulation of dust. All surfaces shall be accessible for cleaning.

(ii) Mixing and packaging equipment shall be constructed of materials compatible with the fuel-ammonium nitrate composition.

(iii) Suitable means shall be provided to prevent the flow of fuel oil to the mixer in case of fire. In gravity flow systems an automatic spring-loaded shutoff valve with fusible link shall be installed.

(d) The provisions of this subsection shall be considered when determining blasting agent compositions.

(i) The sensitivity of the blasting agent shall be determined by means of a No. 8 test blasting cap at regular intervals and after every change in formulation.

(ii) Oxidizers of small particle size, such as crushed ammonium nitrate prills or fines, may be more sensitive than coarser products and shall, therefore, be handled with greater care.

(iii) No hydrocarbon liquid fuel with flashpoint lower than that of No. 2 diesel fuel oil 125°F. minimum shall be used.

(iv) Crude oil and crankcase oil shall not be used.

(v) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture-resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(vi) Peroxides and chlorates shall not be used.

(e) All electrical switches, controls, motors, and lights located in the mixing room shall conform to the requirements in WAC 296-24-956 through 296-24-960; otherwise they shall be located outside the mixing room. The frame of the mixer and all other equipment that may be used shall be electrically bonded and be provided with a continuous path to the ground.

(f) Safety precautions at mixing plants shall include the requirements of this subsection.

(i) Floors shall be constructed so as to eliminate floor drains and piping into which molten materials could flow and be confined in case of fire.

(ii) The floors and equipment of the mixing and packaging room shall be cleaned regularly and thoroughly to prevent accumulation of oxidizers or fuels and other sensitizers.

(iii) The entire mixing and packaging plant shall be cleaned regularly and thoroughly to prevent excessive accumulation of dust.

(iv) Smoking, matches, open flames, spark-producing devices, and firearms (except firearms carried by guards) shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(v) The land surrounding the mixing plant shall be kept clear of brush, dried grass, leaves, and other materials for a distance of at least 25 feet.

(vi) Empty ammonium nitrate bags shall be disposed of daily in a safe manner.

(vii) No welding shall be permitted or open flames used in or around the mixing or storage area of the plant unless the equipment or area has been completely washed down and all oxidizer material removed.

(viii) Before welding or repairs to hollow shafts, all oxidizer material shall be removed from the outside and inside of the shaft and the shaft vented with a minimum one-half inch diameter opening.

(ix) Explosives shall not be permitted inside of or within 50 feet of any building or facility used for the mixing of blasting agents.

(3) Bulk delivery and mixing vehicles.

(a) The provisions of this subsection shall apply to off-highway private operations as well as to all public highway movements.

(b) A bulk vehicle body for delivering and mixing blasting agents shall conform with the requirements of this subsection.

(i) The body shall be constructed of noncombustible materials.

(ii) Vehicles used to transport bulk premixed blasting agents on public highways shall have closed bodies.

(iii) All moving parts of the mixing system shall be designed as to prevent a heat buildup. Shafts or axles which contact the product shall have outboard bearings with 1-inch minimum clearance between the bearings and the outside of the product container. Particular attention shall be given to the clearances on all moving parts.

(iv) A bulk delivery vehicle shall be strong enough to carry the load without difficulty and be in good mechanical condition.

(c) Operation of bulk delivery vehicles shall conform to the requirements of WAC 296-52-489(2). These include the placarding requirements as specified by department of transportation.

(i) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The employer shall assure that the operator is familiar with the commodities being delivered and the general procedure for handling emergency situations.

(ii) The hauling of either blasting caps or other explosives but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous-lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT-specified shipping containers: See 49 CFR Chapter I.

(iii) No person shall smoke, carry matches or any flame-producing device, or carry any firearms while in or about bulk vehicles effecting the mixing transfer or down-the-hole loading of blasting agents at or near the blasting site.

(iv) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle over or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall assure that the driver, in moving the vehicle, has assistance of a second person to guide the driver's movements.

(v) No intransit mixing of materials shall be performed.

(d) Pneumatic loading from bulk delivery vehicles into blastholes primed with electric blasting caps or other static-sensitive systems shall conform to the requirements of this subsection.

(i) A positive grounding device shall be used to prevent the accumulation of static electricity.

(ii) A discharge hose shall be used that has a resistance range that will prevent conducting stray currents, but that is conductive enough to bleed off static buildup.

(iii) A qualified person shall evaluate all systems to determine if they will adequately dissipate static under potential field conditions.

(e) Repairs to bulk delivery vehicles shall conform to the requirements of this section.

(i) No welding or open flames shall be used on or around any part of the delivery equipment unless it has been completely washed down and all oxidizer material removed.

(ii) Before welding or making repairs to hollow shafts, the shaft shall be thoroughly cleaned inside and out and vented with a minimum one-half-inch diameter opening.

(4) Bulk storage bins.

(a) The bin, including supports, shall be constructed of compatible materials, waterproof, and adequately supported and braced to withstand the combination of all loads including impact forces arising from product movement within the bin and accidental vehicle contact with the support legs.

(b) The bin discharge gate shall be designed to provide a closure tight enough to prevent leakage of the stored product. Provision shall also be made so that the gate can be locked.

(c) Bin loading manways or access hatches shall be hinged or otherwise attached to the bin and be designed to permit locking.

(d) Any electrically driven conveyors for loading or unloading bins shall conform to the requirements of WAC 296-24-956 through 296-24-960. They shall be designed to minimize damage from corrosion.

(e) Bins containing blasting agent shall be located, with respect to inhabited buildings, passenger railroads, and public highways, in accordance with Table H-21 and separation from other blasting agent storage and explosives storage shall be in conformity with Table H-22.

(f) Bins containing ammonium nitrate shall be separated from blasting agent storage and explosives storage in conformity with Table H-22.

(5) Transportation of packaged blasting agents.

(a) When blasting agents are transported in the same vehicle with explosives, all of the requirements of WAC 296-52-489 shall be complied with.

(b) Vehicles transporting blasting agents shall only be driven by and in charge of a driver at least twenty-one years of age who is capable, careful, reliable, and in possession of a valid motor vehicle operator's license. Such a person shall also be familiar with the states vehicle and traffic laws.

(c) No matches, firearms, acids, or other corrosive liquids shall be carried in the bed or body of any vehicle containing blasting agents.

(d) No person shall be permitted to ride upon, drive, load, or unload a vehicle containing blasting agents while smoking or under the influence of intoxicants, narcotics, or other dangerous drugs.

(e) It is prohibited for any person to transport or carry any blasting agents upon any public vehicle carrying passengers for hire.

(f) Vehicles transporting blasting agents shall be in safe operating condition at all times.

(g) When offering blasting agents for transportation on public highways the packaging, marking, and labeling

of containers of blasting agents shall comply with the requirements of DOT.

(h) Vehicles used for transporting blasting agents on public highways shall be placarded in accordance with DOT regulations.

(6) Use of blasting agents. Persons using blasting agents shall comply with all of the applicable provisions of WAC 296-52-493.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-497, filed 5/6/86.]

WAC 296-52-501 Water gel (slurry) explosives and blasting agents. (1) General provisions. Unless otherwise set forth in this section, water gels shall be transported, stored and used in the same manner as explosives or blasting agents in accordance with the classification of the product.

(2) Types and classifications.

(a) Water gels containing a substance in itself classified as an explosive shall be classified as an explosive and manufactured, transported, stored, and used as specified for "explosives" in this section, except as noted in subsection (d) of this section.

(b) Water gels containing no substance in itself classified as an explosive and which are cap-sensitive as defined in WAC 296-52-417 under blasting agent shall be classified as an explosive and manufactured, transported, stored and used as specified for "explosives" in this section.

(c) Water gels containing no substance in itself classified as an explosive and which are not cap-sensitive as defined in WAC 296-52-417 under blasting agent shall be classified as blasting agents and manufactured, transported, stored, and used as specified for "blasting agents" in this section.

(d) When tests on specific formulations of water gels result in department of transportation classification as a Class B explosive, bullet-resistant magazines are not required, see WAC 296-52-453.

(3) Fixed location mixing.

(a)(i) Buildings or other facilities used for mixing water gels shall be located with respect to inhabited buildings, passenger railroads and public highways, in accordance with Table H-21.

(ii) In determining the distances separating highways, railroads, and inhabited buildings from potential explosions (as prescribed in Table H-21), the sum of all masses that may propagate (i.e., lie at distances less than prescribed in Table H-22) from either individual or combined donor masses are included. However, when the ammonium nitrate must be included, only fifty percent of its weight shall be used because of its reduced blast effects.

(b) Buildings used for the mixing of water gels shall conform to the requirements of this subsection.

(i) Buildings shall be of noncombustible construction or sheet metal on wood studs.

(ii) Floors in a mixing plant shall be of concrete or of other nonabsorbent materials.

(iii) Where fuel oil is used all fuel oil storage facilities shall be separated from the mixing plant and located in such a manner that in case of tank rupture, the oil will drain away from the mixing plant building.

(iv) The building shall be well ventilated. Heating units that do not depend on combustion processes, when properly designed and located, may be used in the building. All direct sources of heat shall be provided exclusively from units located outside of the mixing building.

(v) All internal-combustion engines used for electric power generation shall be located outside the mixing plant building, or shall be properly ventilated and isolated by a firewall. The exhaust systems on all such engines shall be located so any spark emission cannot be a hazard to any materials in or adjacent to the plant.

(c) Ingredients of water gels shall conform to the requirements of this subsection.

(i) Ingredients in themselves classified as Class A or Class B explosives shall be stored in conformity with WAC 296-52-461.

(ii) Nitrate-water solutions may be stored in tank cars, tank trucks, or fixed tanks without quantity or distance limitations. Spills or leaks which may contaminate combustible materials shall be cleaned up immediately.

(iii) Metal powders such as aluminum shall be kept dry and shall be stored in containers or bins which are moisture-resistant or weathertight. Solid fuels shall be used in such manner as to minimize dust explosion hazards.

(iv) Ingredients shall not be stored with incompatible materials.

(v) Peroxides and chlorates shall not be used.

(d) Mixing equipment shall comply with the requirements of this subsection.

(i) The design of the processing equipment, including mixing and conveying equipment, shall be compatible with the relative sensitivity of the materials being handled. Equipment shall be designed to minimize the possibility of frictional heating, compaction, overloading, and confinement.

(ii) Both equipment and handling procedures shall be designed to prevent the introduction of foreign objects or materials.

(iii) Mixers, pumps, valves, and related equipment shall be designed to permit regular and periodic flushing, cleaning, dismantling, and inspection.

(iv) All electrical equipment including wiring, switches, controls, motors, and lights, shall conform to the requirements of WAC 296-24-956 through 296-24-960.

(v) All electric motors and generators shall be provided with suitable overload protection devices. Electrical generators, motors, proportioning devices, and all other electrical enclosures shall be electrically bonded. The grounding conductor to all such electrical equipment shall be effectively bonded to the service-entrance ground connection and to all equipment ground connections in a manner so as to provide a continuous path to ground.

(e) Mixing facilities shall comply with the fire prevention requirements of this subsection.

(i) The mixing, loading, and ingredient transfer areas where residues or spilled materials may accumulate shall be cleaned periodically. A cleaning and collection system for dangerous residues shall be provided.

(ii) A daily visual inspection shall be made of the mixing, conveying, and electrical equipment to establish that such equipment is in good operating condition. A program of systematic maintenance shall be conducted on regular schedule.

(iii) Heaters which are not dependent on the combustion process within the heating unit may be used within the confines of processing buildings, or compartments, if provided with temperature and safety controls and located away from combustible materials and the finished product.

(4) Bulk delivery and mixing vehicles.

(a) The design of vehicles shall comply with the requirements of this subsection.

(i) Vehicles used over public highways for the bulk transportation of water gels or of ingredients classified as dangerous commodities, shall meet the requirements of the department of transportation and shall meet the requirements of WAC 296-52-489 and 296-52-497 of this section.

(ii) When electric power is supplied by a self-contained motor generator located on the vehicle the generator shall be at a point separate from where the water gel is discharged.

(iii) The design of processing equipment and general requirements shall conform to subsection (3)(c) and (d) of this section.

(iv) A positive action parking brake which will set the wheel brakes on at least one axle shall be provided on vehicles when equipped with air brakes and shall be used during bulk delivery operations. Wheel chocks shall supplement parking brakes whenever conditions may require.

(b) Operation of bulk delivery and mixing vehicles shall comply with the requirements of this subsection.

(i) The placarding requirements contained in DOT regulations apply to vehicles carrying water gel explosives or blasting agents.

(ii) The operator shall be trained in the safe operation of the vehicle together with its mixing, conveying, and related equipment. The operator shall be familiar with the commodities being delivered and the general procedure for handling emergency situations.

(iii) The hauling of either blasting caps or other explosives, but not both, shall be permitted on bulk trucks provided that a special wood or nonferrous-lined container is installed for the explosives. Such blasting caps or other explosives shall be in DOT-specified shipping containers; see 49 CFR Chapter I.

(iv) No person shall be allowed to smoke, carry matches or any flame-producing device, or carry any firearms while in or about bulk vehicles effecting the mixing, transfer, or down-the-hole loading of water gels at or near the blasting site.

(v) Caution shall be exercised in the movement of the vehicle in the blasting area to avoid driving the vehicle over or dragging hoses over firing lines, cap wires, or explosive materials. The employer shall furnish the driver the assistance of a second person to guide the driver's movements.

(vi) No intransit mixing of materials shall be performed.

(vii) The location chosen for water gel or ingredient transfer from a support vehicle into the bore hole loading vehicle shall be away from the blasthole site when the bore holes are loaded or in the process of being loaded.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-501, filed 5/6/86.]

PART G--MISCELLANEOUS

WAC 296-52-505 Coal mining code unaffected. RCW 70.74.210 applies.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-505, filed 5/6/86.]

WAC 296-52-509 Small arms ammunition, primers, propellants and black powder. Storage, transportation, and display requirements.

(1) Small arms ammunition shall be separated from flammable liquids, flammable solids and oxidizing materials by a fire-resistant wall of one-hour rating or by a distance of 25 feet.

(2) Small arms smokeless propellant (class B) shall be packed, stored and transported in DOT approved shipping containers and the following shall apply.

	Maximum Pounds Permitted	Special Restrictions
Private residence or car	25 pounds or less	None
	25 to 50 pounds	Store in strong box or cabinet constructed of 3/4-inch plywood (minimum) or equivalent, on all sides, top and bottom.

	Maximum Pounds Permitted	Special Restrictions
Dealer's warehouse	150 pounds	20 to 150 pounds shall be stored in portable wooden boxes having walls at least one inch nominal thickness.
Dealer's display	75 pounds	In one pound containers.

Quantities in excess of 50 pounds shall be transported in accordance with federal department of transportation regulations.

Quantities in excess of 150 pounds shall be stored in approved, licensed magazines as required in WAC 296-52-441 and 296-52-453.

(3) Small arms ammunition primers shall be packed, stored and transported in DOT approved shipping containers. They shall be separate from flammable liquids, flammable solids and oxidizing materials by a fire-resistant wall of one-hour rating or by a distance of 25 feet. The following shall also apply.

	Maximum Number Permitted	Special Restrictions
Private residence	10,000 primers	None
Private car	25,000 primers	None
Dealer's display	10,000 primers	None
Dealer's warehouse	750,000 primers	No more than 100,000 shall be stored in a pile and piles shall be separated by at least 15 feet.

Quantities in excess of 750,000 primers shall be stored in approved, licensed magazines as required by WAC 296-52-441 and 296-52-453.

(4) Black powder, as used in muzzle loading firearms, shall be packed, stored and transported in DOT approved shipping containers and the following shall apply.

	Maximum Pounds Permitted	Special Restrictions
Private residence	5 pounds	None
Private car	5 pounds	None
Dealer's warehouse	25 pounds	None
Dealer's display	4 pounds	In one pound containers.

Quantities in excess of 25 pounds of black powder, as used in muzzle loading firearms, shall be stored in approved, licensed magazines as required by WAC 296-52-441 and 296-52-453.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-10-044 (Order 86-24), § 296-52-509, filed 5/6/86.]

Chapter 296-54 WAC
SAFETY STANDARDS--LOGGING OPERATIONS

WAC

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DISPOSITION OF SECTIONS FORMERLY CODIFIED IN THIS CHAPTER

296-54-001 Scope and application. [Order 72-14, § 296-54-001, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-003 Waiver and variance. [Order 72-14, § 296-54-003, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-010 Definitions of terms used in the logging standards for the purpose of this chapter. [Order 76-29, § 296-54-010, filed 9/30/76; Order 72-14, § 296-54-010, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/30/62; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-020 Introduction. [Order 72-14, § 296-54-020, filed 7/31/72, effective 9/1/72; Rules (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-030 Management's responsibility. [Order 72-14, § 296-54-030, filed 7/31/72, effective 9/1/72; Rules, § I, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-040 Employee's responsibility. [Order 72-14, § 296-54-040, filed 7/31/72, effective 9/1/72; Rules, § II, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-050 through 296-54-125. Safety and first aid. [Rules (part), filed 7/6/61, 3/23/60.] Decodified. See chapter 296-25 WAC, General safety standards.

296-54-051 Safety educational and first aid requirements. [Order 72-14, § 296-54-051, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-052 General requirements. [Order 72-14, § 296-54-052, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-130 Camps. [Order 72-14, § 296-54-130, filed 7/3/72, effective 9/1/72; Rules, § IV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-140 Railroad and truck road construction and maintenance—Railroads. [Order 72-14, § 296-54-140, filed 7/31/72, effective 9/1/72; Rules, § V (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-150 Truck roads. [Order 72-14, § 296-54-150, filed 7/31/72, effective 9/1/72; Rules, § V (part), filed 6/2/67, 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-160 Transportation of crews—General requirements. [Order 72-14, § 296-54-160, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-170 Transportation of crews by use of speeders and trailers. [Order 72-14, § 296-54-170, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61, 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-180 Transportation of crews by motor vehicles. [Order 72-14, § 296-54-180, filed 7/31/72, effective 9/1/72; Rules, § VI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-185 Methods of crew transportation other than those specified. [Order 72-14, § 296-54-185, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-190 Rigging. [Order 72-14, § 296-54-190, filed 7/31/72, effective 9/1/72; Rules, § VIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules

(part), filed 3/23/60; Addendum, filed 3/30/62.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49-.17.150 and 49.17.240.

296-54-195 Additional requirements for portable spars and boom type yarding and loading machines. [Order 72-14, § 296-54-195, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-200 Yarding. [Order 72-14, § 296-54-200, filed 7/31/72, effective 9/1/72; Rules, § XII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150 and 49.17.240.

296-54-202 Yarding—Signal transmission, signaling equipment and related items. [Rules AB-2 through AB-11, effective 1/2/65; Rules L-4, L-5, L-6, L-16, L-22 through L-27, filed 7/6/61; Rules (part), filed 3/23/60.] Superseded by Rules, filed 6/27/67, effective 7/10/67. See WAC 296-54-350 through 296-54-393.

296-54-210 Tractor logging. [Order 72-14, § 296-54-210, filed 7/31/72, effective 9/1/72; Rules, § XIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-215 Canopy guards, barricades, seat belts, screens and other items required for industrial equipment. [Order 72-14, § 296-54-215, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-216 Roll-over protective structures and overhead protection. [Order 72-14, § 296-54-216, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150 and 49.17.240.

296-54-217 Braking systems for tractors and other mobile equipment. [Order 72-14, § 296-54-217, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-218 Emergency steering. [Order 72-14, § 296-54-218, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-220 Log loading. [Order 72-14, § 296-54-220, filed 7/31/72, effective 9/1/72; Rules, § XIV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-230 Lines, blocks and shackles. [Order 72-14, § 296-54-230, filed 7/31/72, effective 9/1/72; Rules, § IX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-240 Yarding, loading, and skidding units. [Order 72-14, § 296-54-240, filed 7/31/72, effective 9/1/72; Rules, § X, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-250 New and used boiler or pressure vessels. [Rules (part), filed 7/6/61, 3/23/60.] Superseded by Rules, filed 6/27/67, effective 7/10/67. See WAC 296-54-240(9) and chapter 70.79 RCW.

296-54-260 Falling—Bucking. [Order 72-14, § 296-54-260, filed 7/31/72, effective 9/1/72; Rules, § VII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-270 Moving machines. [Order 72-14, § 296-54-270, filed 7/31/72, effective 9/1/72; Rules, § XI, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-280 General requirements. [Order 76-29, § 296-54-280, filed 9/30/76; Order 72-14, § 296-54-280, filed 7/31/72, effective 9/1/72; Rules, § XIX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-281 Water dumps. [Order 72-14, § 296-54-281, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-282 Boom and rafting grounds. [Order 76-7, § 296-54-282, filed 3/1/76; Order 72-14, § 296-54-282, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-284 Dry land sorting and storage. [Order 72-14, § 296-54-284, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-286 Boats and mechanical devices on water. [Order 76-7, § 296-54-286, filed 3/1/76; Order 72-14, § 296-54-286, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-290 Electrical logging equipment. [Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-300 Explosives. [Order 72-14, § 296-54-300, filed 7/31/72, effective 9/1/72; Rules, § XX, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-310 Railroad operations. [Order 72-14, § 296-54-310, filed 7/31/72, effective 9/1/72; Rules, § XVI, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-320 Railroad maintenance, loading or unloading. [Order 72-14, § 296-54-320, filed 7/31/72, effective 9/1/72; Rules, § XVII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17-.040, 49.17.150 and 49.17.240.

296-54-330 Motor truck log transportation. [Order 72-14, § 296-54-330, filed 7/31/72, effective 9/1/72; Rules, § XV, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-335 Stationary log truck trailer loading. [Order 72-14, § 296-54-335, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-340 Maintenance shops. [Order 72-14, § 296-54-340, filed 7/31/72, effective 9/1/72; Rules, § XVIII, filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-350 Signals and signal systems. [Order 72-14, § 296-54-350, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-360 Skidder whistle signals. [Order 72-14, § 296-54-360, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-370 Slackline whistle signals. [Order 72-14, § 296-54-370, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules (part), filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-380 High lead logging whistle signals. [Order 72-14, § 296-54-380, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67; Rules AB-1, effective 1/2/65; Rule Z-3, filed 7/6/61; Rules (part), filed 3/23/60.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-390 High lead whistle signal—General whistle signals. [Rules (part), filed 7/6/61, 3/23/60.] Superseded by Rules, filed 6/27/67, effective 7/10/67. For later enactment see WAC 296-54-391 through 296-54-393.

296-54-391 General requirements for signaling and signal equipment. [Rules, § XXI (part), filed 6/2/67, effective 7/10/67.] Repealed by omission, Order 72-14, filed 7/31/72.

296-54-392 Electric signal systems. [Order 72-14, § 296-54-392, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-393 Radio systems used for voice communications, activation of audible signals or equipment. [Order 72-14, § 296-54-393, filed 7/31/72, effective 9/1/72; Rules, § XXI (part), filed 6/2/67, effective 7/10/67.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-39301 Form No. 157—Application for permit to operate radio signal system in designated area. [Order 72-14, Form No. 157 (codified as WAC 296-54-39301), filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-399 Special rigging standards. [Rules (part), filed 7/6/61, 3/23/60. Recodified from WAC 296-54-400 to avoid duplication of numbering.] Superseded by Rules, filed 6/27/67, effective 7/10/67. See WAC 296-54-190.

296-54-400 Radio-signaling systems—Minimum requirements. [Order 72-14, § 296-54-400, filed 7/31/72, effective 9/1/72.] Repealed by 79-10-081 (Order 79-14), filed 9/21/79. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240.

296-54-450 Rules and regulations of the state board of health concerning labor camps. [Rules (part), filed 7/6/61, 3/23/60.] Decodified. See WAC 296-54-130, and chapters 296-26 and 248-60 WAC.

WAC 296-54-45001 Pulpwood logging. (1) Application.

(a) General. This section applies to pulpwood logging operations including, but not limited to the operations of felling, limbing, marking, bucking, loading, skidding, prehauling and other operations associated with the preparation and movement of pulpwood timber from the stump to the point of delivery. The provisions of this section do not apply to logging operations relating to sawlogs, veneer bolts, poles, piling and other forest products.

(b) Standards incorporated by reference. Standards covering issues of occupational safety and health which are of general application without regard to any specific industry are incorporated by reference in subsections of this section and made applicable to pulpwood logging.

(2) Definitions applicable to this section.

(a) "Arch" means an extension to rear section of a vehicle used in skidding used to raise the forward part of a load clear of the ground.

(b) "Back cut" means the final cut in a felling operation made on the opposite side from the undercut.

(c) "Backfill" means excavated material used to build up a road higher than the original level.

(d) "Ballistic nylon" means a fabric of high tensile properties designed to provide protection from lacerations.

(e) "Borrow" means road construction material which is taken to another location for use. The source area is called "borrow pit."

(f) "Buck" means the process of severing a tree into sections (logs or bolts).

(g) "Choker" means a length of wire rope or chain with a loop or noose at one end used to secure trees or sections of trees for skidding.

(h) "Debark" means the action of removing bark from trees or sections of trees. Debark generally denotes mechanical means as opposed to manual peeling. Synonyms are "bark" and "barking."

(i) "Fairlead" means an arrangement of horizontal, and sometimes vertical, rollers usually mounted at the end of an arch to allow free play of wire rope during winching.

(j) "Fell" means the process of severing a tree from the stump so that it drops to the ground. Note that "fell" and "feller" are used in this standard. The terms "fall" and "faller" are commonly used in the Western United States and they have the same meaning as "fell" and "feller."

(k) "Grade" means the slope of a surface such as a roadway. Also, the elevation of a real or planned surface or structure. (See slope.)

(l) "Guarded" means protected by a cover, shield, rail, or other device, or by location, so as to reduce the probability of injury.

(m) "Guyline" means a line used to stay or support spar trees, booms, etc.

(n) "Landing" means any area where wood is concentrated. It is also called "yard," "deck," "brow."

(o) "Lodged tree" means a tree that has not fallen to the ground after being partly or wholly separated from its stump or otherwise displaced from its natural position.

(p) "Pickaroon" means a device with a head similar to an axe but with a point rather than a blade mounted on the end of a handle which is used to assist in the lifting and placement of bolts of wood.

(q) "Prehaul" means the hauling of forest products by off-the-road vehicles, nonhighway transport, or other movement prior to highway or rail movement, where the pulpwood travels clear of the ground. The term "forward" has the same meaning.

(r) "Pulpwood" means portions of a tree cut into short (normally 4 ft.) lengths to facilitate hand handling. It is intended to be used in the making of pulp rather than any lumber or veneer type finished product.

(s) "Riprap" means rock, metal stripping, or wooden timbers used to contain and stabilize earth embankments and fills.

(t) "Root wad" means the ball of roots which extends above ground level when a tree is pushed over by wind or other means.

(3) Additional definitions.

(a) "Skid" means the movement of bolts, logs, or trees by pulling or towing across the terrain. It may be accomplished by a stationary machine, a moving vehicle, or animal. The term is also called "yarding." The definitive feature is contact between the terrain and the product during movement.

(b) "Slope" is a term of measurement in percent and means the increase in height over the distance measured. An increase of 1 foot over a distance of 5 feet is expressed as a 20 percent slope (see grade).

(c) "Snag" means any dead standing tree or portion thereof remaining standing.

(d) "Spring pole" means a section of tree, sapling, limb, etc., which is, by virtue of its arrangement with relation to other material, under tension.

(e) "Undercut" means a notch cut in a tree to guide the tree in felling.

(f) "Widow maker" means an overhanging limb or section of tree which could become dislodged and drop to the ground (see also "lodged tree").

(g) "Wood hook" and "pulp hook" mean a device to be held in one hand which is fitted with a pointed section. The device is used to assist in the manual piling and handling of bolts of wood (see Pickaroon).

(4) General requirements.

(a) Clothing, personal protective devices, and first aid.

(i) Gloves shall be provided for use when working with wire rope in any form.

(ii) The employer shall ensure that employees exposed to the danger of foot injury due to falling or rolling pulpwood shall wear foot protection which equals or exceeds the crushing and impact specifications of ANSI Z41.1-1967.

(iii) Safety helmets of approved design in accordance with American National Standard for Safety Requirements for Industrial Head Protection, Z89.1-1969 shall be provided and worn.

(iv) Eye or face protection in accordance with American National Standard for Practice for Occupational and Educational Eye and Face Protection, Z87.1-1968 shall be provided and used where chips and sawdust or flying particles are present.

(v) Dust masks in accordance with American National Standard Practices for Respiratory Protection, Z88.2-1969 shall be provided and used where exposure exceeds the limits specified in the general occupational health standards, chapter 296-62 WAC.

(vi) Protection against the effects of noise exposure shall be provided and used when the sound levels exceed those shown in WAC 296-62-09011, Table 7, of the general occupational health standards, when measured on the A scale of a standard sound level meter at slow response.

(vii) First-aid kits in compliance with the requirements of the general safety and health standards, WAC 296-24-065, shall be provided at the work site and on all transport vehicles. In all areas where poisonous snakes may exist, snake bite kits shall be a part of the regular first-aid equipment. First-aid kits shall be regularly inspected and replenished.

(b) Handtools.

(i) The employer shall be responsible for the condition of tools when furnished by him and the user shall inspect any tool prior to using it to determine that it is in proper operating condition. Defective tools shall be removed from service.

(ii) Handles shall be sound, straight and tight fitting.

(iii) Driven tools shall be dressed to remove any mushrooming.

(iv) Cutting tools shall be kept sharp and properly shaped.

(v) Wood hooks and pickaroons of good grade steel shall be used.

(vi) Tools shall be used for purposes for which they were designed.

(vii) Hand tools shall be sheathed or boxed if transported in a vehicle with personnel. If not contained in a box, the sheathed tools shall be fastened to the vehicle.

(viii) Proper storage facilities shall be provided for hand tools. Tools shall be stored in the provided location at all times when not in use.

(c) Environmental conditions.

(i) All work shall terminate and employees moved to a place of safety during electrical storms and periods of high winds or when other unusual weather conditions are dangerous to personnel.

(ii) Dead, broken, or rotted limbs or trees that are a hazard (widow makers) shall be felled or otherwise removed before commencing logging operations, building roads, trails or landing, in their vicinity.

(d) Work areas.

(i) All persons shall be instructed to work within the vocal range of other workers unless a procedure has been established for periodically checking their location and welfare.

(ii) All persons shall be accounted for at the end of each work day.

(iii) An approved (Underwriters' Laboratories or Factory Mutual Engineering Corp.) fire extinguisher shall be provided at locations where machines are operating and/or on each vehicle.

(iv) Fuel shall be stored only in approved (Underwriters' Laboratories or Factory Mutual Engineering Corp.) well-marked containers. The provisions of the general safety and health standards, WAC 296-24-330 through

296-24-33019, shall be applied in the storage and use of flammable fuel.

(e) Chain saw operations.

(i) Chain saw operators shall be instructed to inspect saws daily to assure that all handles and guards are in place and tight, that all controls function properly and that the muffler is operative. Defective equipment shall not be used.

(ii) Chain saw operators shall be instructed to follow manufacturer's instructions as to operation and adjustment.

(iii) Chain saw operators shall be instructed to fuel the saw only in safe areas and not under conditions conducive to fire such as near persons smoking, hot engine, etc.

(iv) Chain saw operators shall be instructed to hold the saw with both hands during operation.

(v) Chain saw operators shall be instructed to start the saw at least 10 feet away from fueling area.

(vi) Chain saw operators shall be instructed to start the saw only on the ground or when otherwise firmly supported.

(vii) Chain saw operators shall be instructed to be certain of footing and to clear away brush which might interfere before starting to cut.

(viii) Chain saw operators shall be instructed not to use engine fuel for starting fires or as a cleaning solvent.

(ix) Chain saw operators shall be instructed to shut off the saw when carrying it for a distance greater than from tree to tree or in hazardous conditions such as slippery surfaces or heavy underbrush. If the operator is carrying a running saw, the saw shall be at idle speed.

(x) Chain saw operators shall be instructed to carry the saw in a manner to prevent contact with the chain and muffler.

(xi) Chain saw operators shall be instructed not to use the saw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.

(xii) Supervision shall be adequately maintained to assure that the instructions required by this chapter are followed.

(f) Stationary and mobile equipment operation.

(i) Equipment operators shall be instructed as to the manufacturers' recommendations for equipment operation, maintenance, safe practices, and site operating procedures.

(ii) Equipment shall be kept free of flammable material.

(iii) Equipment shall be kept free of any material which might contribute to slipping and falling.

(iv) Engine of equipment shall be shut down during fueling, servicing, and repairs except where operation is required for adjustment.

(v) The operator shall inspect the equipment he will be operating at the start of each shift for evidence of failure or incipient failure. Equipment found to have defects which might affect the operating safety shall not be used.

(vi) The equipment operator shall walk completely around machine and assure that no obstacles or personnel are in the area before startup.

(vii) The equipment operator shall start and operate equipment only from the operator's station or from safe area recommended by the manufacturer.

(viii) A seat belt shall be provided on mobile equipment.

(ix) The equipment operator shall check all controls for proper function and response before starting working cycle.

(x) The equipment operator shall ground or secure all movable elements when not in use.

(xi) The foreman shall advise the equipment operator of the load capacity, operating speed and stability limitations of the equipment.

(xii) The equipment operator shall maintain adequate distance from other equipment and personnel.

(xiii) Where signalmen are used, the equipment operator shall operate the equipment only on signal from the designated signalman and only when signal is distinct and clearly understood.

(xiv) The equipment operator shall not operate movable elements (boom, grapple, load, etc.) close to or over personnel.

(xv) The equipment operator shall signal his intention before operation when personnel are in or near the working area.

(xvi) The equipment operator shall dismount and stand clear for all loading and unloading of his mobile vehicle by other mobile equipment. The dismounted operator shall be visible to loader operator.

(xvii) The equipment operator shall operate equipment in a manner that will not place undue shock loads on wire rope.

(xviii) The equipment operator shall not permit riders or observers on the machine unless approved seating and protection is provided.

(xix) The equipment operator shall shut down the engine when the equipment is stopped, apply brake locks and ground moving elements before he dismounts.

(xx) The equipment operator shall when any equipment is transported from one job location to another, transport it on a vehicle of sufficient rated capacity and the equipment shall be properly secured during transit.

(xxi) When any equipment is being moved or operated in the vicinity of an electric distribution line a minimum clearance of ten feet shall be maintained between the electric distribution line and all elements of the machine.

(g) Explosives. Only trained and experienced personnel shall handle or use explosives. Usage shall comply with the requirements of chapter 296-52 WAC and chapter 70.74 RCW.

(5) Equipment protective devices—Stationary and mobile equipment.

(a) Operator's manual. There shall be an operator's manual or operating instructions with each machine. It will describe operation, maintenance, and safe practices.

(b) On all mobile equipment specified in WAC 296-54-216, rollover protective structures (ROPS) shall be

installed and maintained in accordance with the provisions of that section. On equipment requiring ROPS, the provisions of WAC 296-54-210, 296-54-215, 296-54-217 and 296-54-218 shall also apply.

(c) Equipment on which ROPS are not required shall be equipped with the following operator protective devices:

(i) Protective canopy. A protective canopy shall be provided for the operator of mobile equipment. It shall be so constructed as to protect the operator from injury due to falling trees or limbs, saplings or branches which might enter the compartment side areas, and snapping winch lines or other objects.

(A) The canopy shall be of adequate size so as not to impair the operator's movements.

(B) The canopy framework shall consist of at least two arches, either transverse or longitudinal. If transverse, one arch shall be installed behind the operator and one immediately in front of the operator. They shall be joined at the top by at least two longitudinal braces. There shall be two braces which shall act as deflecting guards extending from the leading edge of the forward arch to the front part of the frame of the tractor. If longitudinal arches are used, they shall be extended from behind the operator to the front part of the frame and each arch shall have an intermediate support located immediately ahead of the operator so that ingress or egress is not impeded. Regardless of the type of construction used, the fabrication and method of connecting to the tractor shall be of such design as to develop a strength equivalent to the upright members.

(C) The overhead covering shall be solid material and extend the full width of the canopy.

(D) The lower portion of cab shall be completely enclosed with solid material, except at entrances, to prevent the operator from being injured from obstacles entering the cab.

(E) The upper rear portion of cab shall be fully enclosed with open mesh material with openings of such a size as to reject the entrance of an object larger than 1 3/4 inch in diameter. It shall provide maximum rearward visibility.

(F) Open mesh shall be extended forward as far as possible from the rear corners of the cab sides so as to give the maximum protection against obstacles, branches, etc., entering the cab area.

(G) Deflectors shall also be installed ahead of the operator to deflect whipping saplings and branches. These shall be located so as to not impede ingress or egress from the compartment.

(H) The entrance opening of the canopy shall be not less than 52 inches in vertical height.

(I) Where glass is used it shall be safety glass. An approved substitute may be used.

(aa) An additional metal screen shall be used where glass alone is not adequate operator protection.

(bb) Provision shall be made to clean glass to assure adequate visibility.

(ii) Guards. Guards shall be provided for exposed moving elements such as shafts, pulleys, belts, conveyors and gears in accordance with WAC 296-24-205 through 296-24-20527 and American National Standard Safety Code for Conveyors, Cableways, and Related Equipment, B20.1-1957. Guards shall be in place at all times machine is in operation.

(iii) Mufflers. Mufflers provided by the manufacturer or their equivalent shall be in place at all times the machine is in operation.

(iv) Guylines. Guylines shall be arranged in such manner that stresses will be imposed on not less than two guylines. Stumps used for anchoring guylines shall be carefully chosen as to position and strength. They shall be tied back if necessary. Standing trees shall not be used for this purpose.

(v) Stability and reliability. Crane and loader stability and boom reliability shall be in accordance with American National Standard Safety Code for Cranes, Derricks and Hoists Overhead and Gantry Cranes, B30.2.0-1967, and American National Standard Safety Code for Cranes, Derricks and Hoists—Crawler, Locomotive, and Truck Cranes, B30.5-1968.

(6) Pulpwood harvesting.

(a) Felling, general.

(i) Work areas shall be assigned such that a tree cannot fall into an adjacent work area. The recommended distance between workers is twice the height of trees being felled.

(ii) When trees may fall into public roads a flagman shall be assigned to direct traffic.

(iii) Workers shall not approach a feller closer than twice the height of trees being felled until the feller has acknowledged the signal of approach.

(iv) Lodged trees shall be pulled to the ground at first opportunity with mechanical equipment or animal.

(v) Workers shall not work under a lodged tree.

(vi) Special precautions shall be taken to prevent felling trees into powerlines.

(vii) If a tree does make contact with a powerline the power company shall be notified immediately and all personnel shall remain clear of the area until power company personnel advises that conditions are safe.

(b) Manual felling.

(i) The feller shall plan a retreat path and clear the path as necessary before cut is started.

(ii) The feller shall appraise situation for dead limbs, the lean of tree to be cut, wind conditions, location of other trees and other hazards and exercise proper precautions before cut is started.

(iii) Undercuts shall be about one-third the diameter of the tree to guide tree and reduce possibility of splitting. (Local practice where small diameter trees are felled without being undercut is acceptable if the direction of fall is controlled by the practice.)

(iv) Back or felling cut shall be parallel to the inner edge of the undercut and approximately two inches higher than the undercut.

(v) The saw shall be shut off before feller starts his retreat.

(vi) On terrain where trees are likely to slide or roll fellers shall fell trees from the uphill side and arrange to keep uphill from previously felled trees.

(c) Bucking.

(i) Bucking on slopes shall be from the uphill side unless the log has been securely blocked to prevent rolling or swinging.

(ii) Spring poles and trees under stress shall be cut so that employee is clear when the tension is released. (This is accomplished by cutting under the bend.)

(iii) Trees piled for bucking shall be piled in an orderly parallel manner that minimizes hazard to employees.

(d) Limbing. Spring poles and limbs under stress shall be cut in such a manner that the employee is clear when tension is released.

(e) Mechanical debarking and delimbing. Guarding shall be provided so as to protect employees from flying chunks, logs, chips, bark, limbs, and other material and to prevent the worker from contacting moving parts.

(f) Skidding and prehauling, general.

(i) Only a designated, trained operator shall operate a skid or prehaul machine.

(ii) Choker setters shall work on uphill side of log.

(iii) No passenger personnel shall ride on a prehaul vehicle, logs, pallets, skid pans or other load unless adequate seating and protection is provided except on animal powered wagons.

(iv) Chokers shall be positioned near the end of the log or tree length to allow turning of the prehaul vehicle, to prevent the penetration of the operator station and to reduce possibility of striking the wheel or track.

(v) During winching, the equipment shall be positioned so that the winch line is in alignment with the long axis of the prehaul machine.

(vi) A stuck or inoperative vehicle shall be towed. A loaded pallet shall not be pushed.

(vii) Stakes shall not be added to permit a load beyond the rated capacity of pallets and trailers.

(viii) The operator shall be instructed to be observant and cautious of height of load and vehicle when traveling under trees, limbs, and other overhead obstructions.

(g) Skidding and prehauling equipment requirements.

(i) Arches, fairleads, drawbars, hitches and bumpers or fenders shall be designed and constructed to allow a minimum radius vehicle turn without the load contacting a rear tire or the rear of a track assembly.

(ii) Towed equipment such as skid pans, pallets and trailers shall be attached in such a manner as to allow a full 90° turn, prevent overrunning of the towed vehicle, and assure control of the towed equipment.

(iii) Animal towed equipment shall be equipped with a hand brake within reach of the driver.

(iv) Prehaulers shall have a means for securely retaining pallets or pulpwood.

(v) Prehaulers shall have a means of securely retaining loader for transport when so equipped.

(vi) Provision shall be made to securely fasten and to protect all tools and material on the carrier.

(h) Personnel transport.

(i) The driver shall be licensed as required by the Washington state department of motor vehicles.

(ii) Explosives or flammable liquids shall not be transported on crew vehicles except as specifically provided for in WAC 296-54-160.

(iii) Seats shall be securely fastened.

(i) Off highway truck transport. Truck drivers shall be instructed to stop their vehicles, dismount, check and tighten loose load binders, either just before or immediately after leaving a private road to enter a public road.

(j) Manual loading.

(i) The carrier shall be positioned to provide a safe working clearance between carrier and pile.

(ii) Proper lifting techniques shall be used, i.e., straight back and bend knees.

(iii) The stick shall be placed in the carrier in such manner that it is or will be properly secured.

(iv) Manual handling shall be limited to a weight consistent with correct lifting practices and individual lifting capacity.

(k) Machine loading.

(i) Piles shall be located to provide a safe work area.

(ii) Only the machine operator and slingman where used, shall be in the work area.

(iii) The load shall be positioned for balance and to prevent slippage or loss. Slings shall be placed to secure and balance the load.

(l) Storage. Piles shall be located and constructed in a manner to provide safe working area around them.

(m) Banding and piling bundles.

(i) Steel bands used in the making of bundles shall have a 5 to 1 safety factor for the weight of the bundles and shall be free of any visible defect which might detract from their designed strength.

(ii) Bands shall be placed when bundle is close to ground.

(iii) No part of the body shall be under the bundle at any time. Bundles shall be placed on runners. Bundles may be double stacked with top end bundle one half or more back from the lower rank end bundle.

(n) Chipping (in-woods locations).

(i) Access covers or doors shall not be opened until the drum or disk is at a complete stop.

(ii) Infeed and discharge ports shall be designed to prevent contact by personnel with disc, knives, or blower blades.

(o) Roads and trails, general.

(i) Roads shall be maintained and hazardous conditions corrected.

(ii) Where vision is limited warnings shall be posted.

(iii) Curve radii shall be the maximum consistent with terrain.

(iv) When night work is necessary, lighting shall be provided in accordance with WAC 296-54-280.

(v) Local road standards and maximum weight of traffic expected shall be used as guides for materials, construction features and drainage.

(p) Road and trail pioneering and earthwork.

(i) Banks at the borrow area shall be sloped to prevent slides.

(ii) Backfill shall be firmly compacted.

(iii) Roadside banks shall be sloped or stabilized to prevent slides.

(iv) Overhanging banks, large rocks and debris shall be removed or secured.

(v) Where riprap is used the material and design shall assure containment of material.

(vi) Trees or snags which may fall into the road shall be felled.

(q) Road and trail drainage.

(i) Drainage shall be provided to prevent washouts and landslides.

(ii) Culverts shall be of adequate strength and of a size to handle maximum runoff.

(iii) Where necessary, ditches and banks shall be stabilized by vegetation, riprap, or other adequate means.

(r) Road and trail surfacing. Road surface shall be properly compacted, graded and crowned.

(s) Bridges.

(i) Bridges shall be constructed in accordance with the provisions of WAC 296-54-150.

(ii) Bridges shall be decked and curbed.

[Order 76-7, § 296-54-45001, filed 3/1/76; Order 74-20, § 296-54-450 (codified as WAC 296-54-45001), filed 5/6/74.]

WAC 296-54-501 Scope and application. The requirements of this chapter augment those requirements of the general safety standards promulgated by the department of labor and industries, division of industrial safety and health, applicable to this industry, and apply to all persons, firms, corporations or others engaged in logging operations that come within the jurisdiction of the department of labor and industries. The requirements herein contained do not apply to log handling at sawmills, plywood mills, pulp mills or other manufacturing operations governed by their own specific safety standards.

The safety requirements herein contained are not to be construed to imply that other safe work practices, procedures or methods should not be employed where such methods, means or practices may be required to prevent accidents. Both employers and employees have a duty to do whatever is reasonable and practical to avoid causing accidents. These requirements are minimum safety requirements and shall augment other safety standards developed by the department which are of a general nature and apply to all industrial operations such as those contained in the general safety standards, chapter 296-24 WAC; occupational health standards, chapter 296-62 WAC; and precautionary labeling of containers of hazardous materials, chapter 296-64 WAC, or others which may be applicable. Regulations adopted by the department concerning certain types of equipment or conditions, such as metal and nonmetallic mines, quarries, pits and crushing operations, chapter 296-61 WAC, and possession, handling and use of explosives, chapter 296-52 WAC shall be complied with when applicable.

Some of the factors involving safe practices are use of good judgment, and the avoidance of taking chances. Accidents can be avoided in many instances by everyone conscientiously applying their knowledge of safety.

Copies of all society of automotive engineers reports (SAE) referred to in these standards are on file in all district offices of the division of industrial safety and health of the department of labor and industries, and may be reviewed by any interested person. Individuals desiring to obtain copies of such material shall arrange to do so directly from the publishers or from other sources. The division of industrial safety and health will not assume the responsibility of acquiring such material for uses other than its own needs.

Note: Safety standards for pulpwood logging are contained in a separate edition titled "Safety standards for pulpwood logging," WAC 296-54-450.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-501, filed 9/21/79.]

WAC 296-54-503 Variance. The assistant director may, upon receipt of application and after adequate investigation by the department, permit a variation from these requirements when an approved alternate means or manner of protection is provided, which affords an equivalent measure of safety as required by the rule from which a variance is requested.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-503, filed 9/21/79.]

WAC 296-54-505 Definitions applicable to this chapter. (1) A-frame - a structure made of two independent columns fastened together at the top and separated by a reasonable width at the bottom to stabilize the unit from tipping sideways.

(2) Alternate communication system - a system approved by the department of labor and industries, which by voice or other media than horn or whistle, provides a safe and reliable method of communication between crew members.

(3) A side - any place of activity involving a group in the yarding and loading of logs.

(4) An operation - any place where logging or log related activities are taking place.

(5) Approved - approved by the department of labor and industries, division of industrial safety and health.

(6) Arch - any device attached to the back of a vehicle and used for raising one end of logs to facilitate movement.

(7) Authorized person - a person approved or assigned by the employer to perform a specific type of duty(s) or to be at a specific location at a certain time(s).

(8) Back line - that section of the haulback that runs between the spar tree and the corner block.

(9) Ballistic nylon - a fabric of high tensile properties designed to provide protection from lacerations.

(10) Barrier - a fence, wall or railing to prevent passage or approach.

(11) Base of tree - that portion of a natural tree not more than three feet above ground level.

(12) Bight of the line - any area where a person is exposed to a controlled or uncontrolled moving line.

(13) Binder - a hinged lever assembly for connecting the ends of a wrapper to tighten the wrapper around the load of logs or materials.

(14) Boomboat - any boat used to push or pull logs, booms, bundles, or bags, in booming ground operations.

(15) Boomscooter – a small boat, usually less than fourteen feet in length, equipped with an outboard motor, having directional pushing capabilities of 360 degrees.

(16) Brailing – when tiers of logs, poles, or piles are fastened together with a type of dogline and the ends of the side members are then fastened together for towing.

(17) Brow log – a log or a suitable substitute placed parallel to any roadway at a landing or dump to protect the carrier and facilitate the safe loading or unloading of logs, timber products, or materials.

(18) Bullbuck – the supervisor of the cutting crew.

(19) Butt welding – the practice of welding something end to end.

(20) Cable tree thinning – the selective thinning of a timber stand utilizing mobile yarding equipment specifically designed or adapted for the purpose. Such systems may be of the skyline, slackline, or modified slackline, overhead cable system.

(21) Choker – a length of wire rope with attachments for encircling the end of a log to be yarded.

(22) Chunking – the clearing of nonusable material from a specified area.

(23) Cold deck – any pile of logs which is yarded and left for future removal.

(24) Competent person – one who is capable of identifying hazards in the surrounding or working conditions which are unsanitary, hazardous or dangerous.

(25) Corner block – the first block the haulback passes through on its way to the tail block.

(26) Crew bus or vehicle – any vehicle furnished by or for the employer that will transport five or more persons.

(27) Crotch line – two short lines attached to the same ring or shackle, used for loading or unloading.

(28) Danger trees – trees with evidence of deterioration or physical damage to the root system or stem, as well as the degree and/or direction of lean. (See snag)

(29) Directional falling – a mechanical means to control the direction of falling timber.

(30) Dog line – type of line used to fasten logs or timber products together by the use of dogs.

(31) Donkey – any machine with a series of drums used to yard logs.

(32) Double ended logs – two logs end to end on the same lay.

(33) Droplines – a short line attached to the carriage or carriage block which is used as an extension to the main line.

(34) Drum – a mechanical device on which line is spooled or unspooled.

(35) Dry land storage – decks of logs stored for future removal or use.

(36) Dutchman –

(a) a block used to change direction of line lead.

(b) A method of falling timber consisting of inserting a piece of material into one side of the undercut to assist in pulling a tree against the lean or a section of the undercut can be left in a corner to accomplish the same purpose.

(37) Experienced person – a person who has been trained and has participated in the subject process for a period of time long enough to thoroughly acquaint the person with all facets of the process.

(38) F.O.P.S. – falling object protective structure.

(39) Fair lead – sheaves, rolls, or a combination thereof arranged to receive a line coming from any direction for proper line spooling on to a drum.

(40) Front end loader – a mobile machine mounted on a wheeled or tracked chassis, equipped with a grapple, tusk, bucket, or fork–lift device, and employed in the loading, unloading, stacking, or sorting of logs or materials.

(41) Guard rail – a railing to restrain a person.

(42) Guyline – a line used to support or stabilize a spar.

(43) Gypsy drum – a mechanical device wherein the line is not attached to the drum and is manually spooled to control the line movement on and off the drum.

(44) Haulback – a line used to pull the buttrigging and mainline to the logs to be yarded.

(45) Haulback block – any block the haulback line passes through including the corner block and tailblock.

(46) Hay rack –

(a) a type of loading boom where two tongs are used and logs are suspended.

(b) A transporting vehicle with multiple sets of bunks attached to a rigid frame usually used for hauling logs.

(47) Hazardous falling area – the area within a circle centered on the tree being felled and having a radius not less than twice the height of that tree.

(48) Head tree – the tree where yarding and/or loading takes place. (See spar tree)

(49) Heel boom – a type of loading boom where one tong is used and one end of the log is pulled up against the boom.

(50) High lead – a system of logging wherein the main line is threaded through the main line block, which is attached near the top of the spar, to obtain a lift of the logs being yarded.

(51) Hobo log and/or hitchhiker – a free or unattached log that is picked up by a turn and is transported with the turn.

(52) Hooktender – the worker that supervises the method of moving the logs from the woods to the landing.

(53) Hot deck – a landing where logs are being moved.

(54) Hydraulic jack – a mechanical device, powered by internal pressure, used to control the direction in which a tree is to be felled.

(55) In the clear – being in a position where the possibility of harmful physical contact is minimized.

(56) Jackstrawed – trees or logs piled in an unorderly manner.

(57) Jaggers – any projecting broken wire in a strand of cable.

(58) Kerf – that portion of timber products taken out by the saw teeth.

(59) Knob – a metal ferrule attached to the end of a line.

(60) Landing – any place where logs are laid after being yarded, awaiting subsequent handling, loading, and hauling.

(61) Lift tree – an intermediate support for skylines.

(62) Loading boom – any structure projecting from a pivot point to guide a log when lifted.

(63) Lodged tree – a tree leaning against another tree or object which prevents it from falling to the ground.

(64) Log bronco – a sturdily built boat usually from twelve to twenty feet in length, used to push logs or bundles of logs in a generally forward direction in booming and rafting operations.

(65) Log dump – a place where logs are removed from transporting equipment. It may be either dry land or water, parbuckled over a brow log or removed by machine.

(66) Logging machine – a machine used or intended for use to yard, move, or handle logs, trees, chunks, trailers, and related materials or equipment. This shall include self–loading log trucks only during the loading and unloading process.

(67) Logs – tree segments suitable for subsequent processing into lumber, pulpwood, or other wood products, including but not limited to poles, piling, peeler blocks and bolts.

(68) Log stacker – a mobile machine mounted on a wheeled or tracked chassis, equipped with a frontally mounted grapple, tusk, or forklift device, and employed in the loading, unloading, stacking, or sorting of logs.

(69) Long sticks – an overlength log that creates a hazard by exceeding the safe perimeters of the landing.

(70) Mainline – the line attached to the buttrigging used to pull logs to the landing.

(71) Mainline block – the block hung in the spar through which the mainline passes.

(72) Mainline train – any train that is made up for travel between the woods and log dump.

(73) Matchcutting – the felling of trees without using an undercut.

(74) Mechanized falling – falling of standing timber by a self–propelled mobile wheeled or tracked machine equipped with a shear or other powered cutting device.

(75) Mechanized feller – any such machine as described in WAC 296–54–535 and 296–54–537, and includes feller/bunchers and similar machines performing multiple functions.

(76) Mobile log loader – a self–propelled log loading machine mounted on wheels or tracks, incorporating a grapple–rigged Bohemian, goose neck, or straight boom fabricated structure, employed in the loading or unloading of logs by means of grapples or tongs.

(77) Mobile yarder – a logging machine mounted on wheels, tracks, or skids, incorporating a vertical or inclined spar, tower, or boom, employed in skyline, slackline, high lead, or grapple overhead cable yarding systems.

(78) Must – the same as "shall" and is mandatory.

(79) New area or setting – a location of operations when both the loading station and the yarder are moved.

(80) Pass line – a small line threaded through a block at the top of the spar to assist the high climber.

(81) Permissible (as applied to any device, equipment or appliance) – such device, equipment, or appliance has the formal approval of the United States Bureau of Mines, American Standards Association, or National Board of Fire Underwriters.

(82) Portable spar or tower – a movable engineered structure designed to be used in a manner similar to which a wood spar tree would be used.

(83) Qualified person – a person, who by possession of a recognized degree, certificate, professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated ability to solve or resolve problems relating to the subject matter, the work, or the project.

(84) Reach – a steel tube or wood timber or pole connected to the truck and inserted through a tunnel on the trailer. It steers the trailer when loaded and pulls the trailer when empty.

(85) Receding line – the line on a skidder or slackline comparable to the haulback line on a yarder.

(86) Reload – an area where logs are dumped and reloaded or transferred as a unit to another mode of transportation.

(87) Rollway – any place where logs are dumped and they roll or slide to their resting place.

(88) R.O.P.S. – roll over protection structure.

(89) Rub tree – a tree used to guide a turn around a certain area.

(90) Running line – any line which moves.

(91) SAE – society of automotive engineers.

(92) Safety factor – the ratio of breaking strength to a safe working strength or loading.

(93) Safety glass – a type of glass that will not shatter when broken.

(94) Sail block – a block hung inverted on the sail guy to hold the tong block in proper position.

(95) Scaler – the person who measures the diameter and length of the logs, determines specie and grade, and makes deductions for footage calculations.

(96) Shall – a requirement that is mandatory.

(97) Shear log – a log placed in a strategic location to divert passage of objects.

(98) Shore skids – any group of timbers spaced a short distance apart on which logs are rolled.

(99) Signal person – the person designated to give signals to the machine operator.

(100) Siwash – to change the lead of a line with a physical object such as a stump or tree instead of a block.

(101) Skidder – a machine or animal used to move logs or trees to a landing.

(102) Skidding – movement of logs or trees on the surface of the ground to the place where they are to be loaded.

(103) Skyline – the line suspended between two points on which a block or carriage travels.

(104) Slackline – a form of skyline where the skyline cable is spooled on a donkey drum and can be raised or lowered.

(105) Slack puller – any weight or mechanical device used to increase the movement of a line when its own weight is inadequate.

(106) Snag – a dead standing tree or a portion thereof. (See Danger tree)

(107) Snorkel – a loading boom modified to extend its limitations for the purpose of yarding.

(108) Spar – a device rigged for highlead, skyline or slackline yarding.

(109) Spar tree – (see spar).

(110) Speeder – a small self-powered vehicle that runs on a railroad track.

(111) Spike – a long heavy nail similar to a railroad spike.

(112) Springboard – a board with an iron tip used by fallers to stand on while working above ground level.

(113) Square lead – the angle of 90 degrees.

(114) Squirrel – a weight used to swing a boom when the power unit does not have enough drums to do it mechanically.

(115) Squirrel tree – a topped tree, guyed if necessary, near the spar tree in which the counter balance (squirrel) of a tree rigged boom is hung.

(116) Stiff boom – two or more boom sticks wrapped together on which boom persons walk or work.

(117) Strap – any short piece of line with an eye or "D" in each end.

(118) Strawline – a small line used for miscellaneous purposes.

(119) Strap socket or D – a socket with a closed loop and arranged to be attached to the end of a line by the molten zinc, or an equivalent method. It is used in place of a spliced eye.

(120) Strip – a definite location of timber on which one or more cutting crews work.

(121) Swamping – the falling or cutting of brush around or along a specified place.

(122) Swifter – a piece of equipment used to tie the side sticks of a log raft together to keep the raft from spreading.

(123) Swing cut – a back cut in which the holding wood on one side is cut through.

(124) Tail block – the haulback block at the back end of the show.

(125) Tail hold – an anchor used for making fast any line or block.

(126) Tail tree – the tree at the opposite end from the head tree on which the skyline or other type rigging is hung.

(127) Tight line – when either the mainline or haulback are held and power is exerted on the other or when power is exerted on both at the same time.

(128) Tong line block – the block hung in a boom through which the tong line operates.

(129) Tongue – a device used to pull and/or steer a trailer.

(130) Topping – cutting off the top section of a standing tree prior to rigging the tree for a spar or tail tree.

(131) Tower – (see portable spar or tower).

(132) Tractor – a machine of wheel or track design used in logging.

(133) Tractor logging – the use of any wheeled or tracked vehicle in the skidding or yarding of logs.

(134) Transfer (as used in loading) – changing of logs in a unit from one mode of transportation to another.

(135) Tree jack – a grooved saddle of wood or metal rollers contained within two steel plates, attached to a tree with a strap, used as a guide for skyline, sail guy, or similar static line. It is also formed to prevent a sharp bend in the line.

(136) Tree plates – steel bars sometimes shaped as elongated J's, which are fastened near the top of a tree to hold guylines and prevent them from cutting into the tree when tightened. The hooks of the J are also used to prevent the mainline block strap from sliding down the tree.

(137) Tree pulling – a method of falling trees in which the tree is pulled down with a line.

(138) Tug – a boat, usually over twenty feet in length, used primarily to pull barges, booms of logs, bags of debris, or log rafts.

(139) Turn – any log or group of logs attached by some means to power and moved from a point of rest to a landing.

(140) "V" lead – a horizontal angle of less than 90 degrees formed by the projected lines of the mainline from the drum of the logging machine through the block or fairlead and the yarding load or turn.

(141) WAC – Washington Administrative Code.

(142) Waistline – that portion of the haulback running between the corner block and the tail block.

(143) Wrapper – a cable assembly or chain used to contain a load of logs.

(144) Wrapper rack – barrier used to protect a person while removing binders and wrappers from a loaded logging truck.

(145) Yarder – a machine with a series of drums used to yard logs. (See donkey)

(146) Yarding – the movement of logs from the place they are felled to a landing.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-505, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-505, filed 9/21/79.]

WAC 296-54-507 Management's responsibility. In addition to observance of the general safety and health standards:

(1) The employer shall assume the responsibility of safety training for new employees.

(2) The employer shall assume the responsibility of work assignments so that no employee shall be allowed to work in a position or location so isolated that he is not within ordinary calling distance of another employee who can render assistance in case of emergency. In any operation where cutting, yarding, loading, or a combination of these duties is carried on, there shall be a minimum of two employees who shall work as a team and shall be in visual or hearing contact with one another to allow prompt awareness of injury or cessation of work

activity of one employee by the other. No employee shall be left alone for a period of time to exceed fifteen minutes without visual or hearing contact. In addition, there shall be some system of back-up communication in the near proximity to enable an employee to call for assistance in case of emergency.

Note: This does not apply to operators of motor vehicles, watchmen or certain other jobs which, by their nature, are singular employee assignments. However, a definite procedure for checking the welfare of all employees during their working hours shall be instituted and all employees so advised.

(3) The employer shall establish a method of checking the employees in from the woods at the end of each shift. Each immediate supervisor shall be responsible for his crew being accounted for. This standard also includes operators of all movable equipment.

(4) Prior to the commencement of logging operations in a new area or setting, a safety meeting shall be held and a plan shall be developed and implemented whereby management shall ascertain by direct supervision that the work is being carried out with special emphasis on safety and safe work practices.

(5) When extreme weather or other extreme conditions are such that additional hazards arise, additional precautions shall be taken to assure safe operations. If the operation cannot be made safe because of the aforementioned conditions, the work shall be discontinued until safe to resume.

(6) Danger trees within reach of landings, roads, rigging, buildings or work areas shall be either felled before regular operations begin or work shall be arranged so that employees shall not be exposed to hazards involved.

(7) Management shall ensure that intoxicating beverages and narcotics are not permitted or used by employees on or in the vicinity of the work site. Management shall cause employees under the influence of alcohol or narcotics to be removed from the work site. This requirement does not apply to employees taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the employee or others.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-507, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-507, filed 9/21/79.]

WAC 296-54-509 Employee's responsibility. (1) Employees shall coordinate and cooperate with management and other employees in an attempt to eliminate accidents.

(2) Employees shall study and observe all safe work practices governing their work.

(3) They should offer safety suggestions, wherein such suggestions may contribute to a safer work environment.

(4) Intoxicating beverages and narcotics shall not be permitted or used by employees in or around the work sites. Employees under the influence of alcohol or narcotics shall not be permitted on the work site. This rule does not apply to employees taking prescription drugs and/or narcotics as directed by a physician providing such use shall not endanger the employee or others.

(5) Employees shall conduct themselves in a workmanlike manner while on the work site.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-509, filed 9/21/79.]

WAC 296-54-511 Personal protective equipment. (1) General requirements.

(a) Protective equipment, including personal protective equipment for eyes, face, head, hearing and extremities, protective clothing, respiratory devices and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee owned equipment. Where employees are required to provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance and sanitation of such equipment.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed. All safety belts and attachments shall meet the requirements of section 3 of ANSI A10.14-1975.

(2) Eye and face protection. Protective eye and/or face equipment shall be required and worn where there is a probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors. Suitable eye protectors shall be provided and worn where machines or operations present the hazard of flying objects, glare, liquids, injurious radiation, or a combination of these hazards.

(3) Respiratory protection. The respiratory protection requirements of the general occupational health standards, chapter 296-62 WAC, shall apply.

(4) Occupational head protection. Hard hats meeting the specifications contained in American National Standards Institute (ANSI) Z89.1-1969, shall be worn by all employees involved in the logging operation or any of its related activities unless such employees are protected by F.O.P.S., cabs or canopies. Hard hats shall be maintained in serviceable condition.

(5) Personal flotation devices. Employees working on, over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices in accordance with General safety and health standards, WAC 296-24-086.

(6) Occupational footwear.

(a) All employees whose duties require them to walk on logs or boomsticks, shall wear sharp-calked shoes, or the equivalent, except when conditions such as ice, snow, etc., render calks ineffective. When calks are ineffective and other footwear does not afford suitable protection, workers shall not be required to work on logs or boomsticks.

(b) When nonslip type shoes or boots afford a greater degree of employee protection than calk shoes, such as at scaling stations, log sorting yards, etc., then this type footwear may be worn in lieu of calk shoes providing firm ankle support and secure footing are maintained.

(7) Leg protection. Employees whose normal duties require them to operate a power saw shall wear a flexible ballistic nylon pad or pads, sewn or otherwise fastened into the trousers, or other equivalent protection, that will protect the vulnerable area of the legs.

(8) Hand protection. All employees handling lines or other rough materials where there is a reasonable possibility of hand injury, shall wear suitable gloves or other hand protection to prevent injury.

(9) Hearing protection. The hearing protection requirements of the general occupational health standards, chapter 296-62 WAC, shall apply.

(10) Protective clothing. Employees working on landings or in log sorting yards, when working on or from the ground, shall wear highly visible hard hats and/or yellow or orange vests, or similarly colored garments, to enable equipment operators to readily see them. It is recommended that such hard hats and vests or outer garments be of a luminous or reflectorized material. Employees performing duties of a flagperson shall wear a hard hat and vest or garment of contrasting colors. Warning vests and hard hats worn at night shall be of a reflectorized material.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-54-511, filed 11/30/83. Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-511, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-511, filed 9/21/79.]

WAC 296-54-513 Safety educational and first-aid requirements. See the general safety and health standards, WAC 296-24-040 through 296-24-065.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-513, filed 9/21/79.]

WAC 296-54-515 General requirements. (1) Emergency stops. Speed limiting devices, safety stops or emergency shut down devices or shut off valves shall be provided, with the controls so located that in the event of an emergency, the prime mover may be shut down from a safe place.

(2) Machine operators. Machine operators shall be experienced in operating the equipment they are using, except that inexperienced persons may operate the equipment to gain experience while in training and may do so only while working under immediate supervision of an experienced authorized person.

(3) Refueling vehicles. Vehicles shall not be fueled while the motors are running with the exception of helicopters, which is permitted under certain conditions. (See WAC 296-54-559(36).)

(4) Hydraulic lines. If failure of hydraulic lines would create a hazard to an equipment operator while at the operating station, safeguards shall be installed in such a manner as to eliminate the hazard. All hydraulic lines shall be maintained free of leaks and shall be shielded from damage wherever possible.

(5) Defective equipment. Equipment in need of repair shall be reported to management in writing as soon as possible and such equipment shall not be used until repairs are completed if there is a possible hazard to safety of the operator or other employees.

(6) Lock out – tag out. Procedures for lock out – tag out shall be established and implemented to prevent the accidental starting of equipment that is shut down for repairs, maintenance or adjustments.

(7) Control marking. The controls of all machines shall be marked as to their purpose in the operation of the machine.

(8) Metal objects. Metal objects driven into trees or logs shall be removed immediately after serving their intended purpose.

(9) Fire protection. An approved, fully charged and maintained, fire extinguisher shall be available at locations where machines are operating or on each vehicle.

(10) Hand tools. Hand and portable powered tools and other hand-held equipment shall be maintained and used in accordance with the general safety and health standards, WAC 296-24-650.

(11) Storage, handling and marking of fuel. Fuel shall be stored, handled and marked in accordance with WAC 296-24-330.

(12) Smoking prohibited. Smoking shall be prohibited in battery charging areas and within fifty feet of all refueling operations. Precautions shall be taken to prevent open flames, sparks or electric arcs in battery charging or refueling areas.

(13) Charging batteries. When charging batteries, the vent caps shall be kept in place to avoid electrolyte spray. Care shall be taken to ensure caps are functioning. The battery (or compartment) cover(s) shall be open to dissipate heat.

(14) Uncovered batteries. Tools and other metallic objects shall be kept away from the tops of uncovered batteries.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-515, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-515, filed 9/21/79.]

WAC 296-54-517 Camps. Rules, regulations and standards for camps shall be in accordance with WAC 296-24-125.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-517, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-517, filed 9/21/79.]

WAC 296-54-519 Transportation of crews by motor vehicle. (1) Seats. Anchored seats shall be provided for each person when riding in any vehicle.

(2) Seat belts. The driver of a crew vehicle shall be provided with and shall wear a seat belt at all times the crew vehicle is in motion.

(3) Barricade. After May 1, 1980, a substantial barricade shall be provided behind the driver of a crew bus or vehicle that will transport nine or more passengers.

The barricade shall extend from the floor to at least a level even with the top of the driver's head.

(4) Safe entrance and exits. Adequate provisions shall be made for safe entrance and exits.

(5) Enclosed racks. When equipment or tools are carried inside the vehicle, they shall be stored in enclosed racks or boxes, which shall be properly secured to the vehicle.

(6) Vehicle to be stopped. Persons shall not enter or exit from any vehicle until the vehicle is completely stopped.

(7) Keep within vehicle. Persons shall keep all parts of the body within the vehicle.

(8) Stoves prohibited. Provisions shall be made for heat and light in the passenger portion of the vehicle. Use of stoves in vehicles is prohibited.

(9) Emergency exit. On vehicles designed to transport nine or more passengers, an emergency exit not less than six and one-half square feet in area, with the smaller dimension being not less than 18 inches, shall be placed at the back of the vehicle or near the back on the side opposite the regular entrance. The route to and egress from the exit must be unobstructed at all times.

(10) Fire extinguisher. When no fuel is transported in the crew vehicle, a minimum rated 5/BC dry chemical fire extinguisher shall be kept in the passenger compartment. When fuel is transported on the crew vehicle in accordance with subsection (14) of this section, a minimum rated 10/BC dry chemical fire extinguisher shall be kept in the passenger compartment. The extinguishing agent shall be nontoxic and preferably a noncorrosive type.

(11) Crew and emergency vehicles. Vehicles designed to transport five or more passengers shall be equipped with stretchers, two blankets, and first-aid kits. If used as a means of transporting injured persons, it shall be designed to enable persons to pass a loaded stretcher into the vehicle. Provisions shall be made for proper securing of the stretcher.

(12) Exhaust systems. Exhaust systems shall be designed and maintained to eliminate the exposure of passengers to toxic agents.

(13) Limitation of transportation of explosives. Explosives shall not be carried on any vehicle while the vehicle is being used to transport workers other than the driver and two persons.

(14) Limitation of transportation of fuels. Fuels shall be transported or stored only in approved safety containers. Enclosed areas where fuels are carried or stored shall be vented in such a manner that a hazardous concentration of fumes cannot accumulate. All containers or drums shall be properly secured to the vehicle while being transported. Commercially built vehicles of the pick-up or flatbed type with a seating capacity of not to exceed six persons may be used to carry fuels in or on the bed of such vehicles, providing such fuels are not carried in the crew compartment. Van-type vehicles may be used to carry fuels only when a vapor-proof bulkhead is installed between the passenger compartment and storage compartment. Not more than forty-two gallons of gasoline may be carried or stored in the compartment and each container shall have a capacity not exceeding seven gallons.

(15) Motor vehicle laws. Motor vehicles used as crew vehicles regularly for the transportation of workers shall be covered against the weather and equipped and operated in conformity with applicable state of Washington motor vehicle laws.

(16) Operator's license. All operators of crew vehicles shall be experienced drivers and shall possess a current valid drivers license.

(17) Daily vehicle check. Operators of crew vehicles shall check brakes and lights daily and shall keep windshields and mirrors clean.

(18) Good repair. Crew vehicles shall be maintained in good repair and safe condition.

(19) Dump trucks. Dump trucks shall only be used in an emergency to transport workers and shall be equipped with adequate safety chains or locking devices which will eliminate the possibility of the body of the truck being raised while employees are riding in the truck. Emergency shall mean any unforeseen circumstances which calls for immediate action when danger to life or danger from fire exists.

(20) Means of signaling. An effective means of signaling shall be provided for communication between the driver and the passengers being transported when they are in separate compartments.

(21) Load limit. The passenger load limit of a crew vehicle shall not exceed the seating capacity of the vehicle.

(22) Vehicle check. Crew vehicles shall be thoroughly inspected by a mechanic for defects which could create a hazardous condition for operation. Such inspections shall be carried out at least every month. Defects known to the operator shall be reported in writing to the mechanic or person in charge. If defects are found, they shall be corrected before the vehicle is used for the transportation of crews.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-519, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-519, filed 9/21/79.]

WAC 296-54-521 Transportation of crews by use of speeders and trailers. (1) Braking systems. All speeders shall be equipped with two separate and independently operated braking systems either of which shall be of sufficient capacity to lock all wheels when speeder is fully loaded.

(2) Sanding methods. All speeders used for transporting crews shall be equipped with methods for sanding tracks, operative for both directions of travel.

(3) Lights, windshield wipers. Electric lights of sufficient candle power and range so that vehicle can be stopped within the range of the beam, and which will shine in the direction of travel, shall be provided on all speeders. Adequate tail lights shall be installed and maintained in good order. Automatic windshield wipers of sufficient capacity to maintain clear visibility shall be installed on all speeders.

(4) Trailers. When trailers are coupled behind speeders, they shall be equipped with two separate and independent braking systems, either shall be of sufficient capacity to lock all wheels when the trailer is fully loaded. One of these shall be power operated and shall be controlled from the speeder; the other manually operated from the trailer. One man shall be designated to operate this brake in case of emergency.

(5) Trailer coupling. All trailers shall be coupled to speeders with metal couplings and safety chains or straps of sufficient strength to withstand the impact caused by a broken coupling.

(6) Trailer not to coast. No trailer shall coast or be used as a crew car without being attached to a speeder.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-521, filed 9/21/79.]

WAC 296-54-523 Methods of crew transportation other than those specified. Special approval. Persons or firms desiring to transport crews by methods other than those specified in these rules shall so inform the division of industrial safety and health, department of labor and industries, so that an evaluation of that method may be made. Should the proposed method be found to afford a measure of safety acceptable to the division of industrial safety and health, department of labor and industries, a written order stating that finding shall be issued to the person or firm concerned by the division of industrial safety and health and the proposed method may be utilized.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-523, filed 9/21/79.]

WAC 296-54-525 Railroad construction and maintenance. (1) Construction. All construction shall be according to safe logging practice as to size of rails, ties, track accessories and methods of installing same.

(2) Rail guards. Rail guards shall be placed on main lines and spurs, consistent with type of traffic and general local conditions.

(3) Rail anchors. Rail anchors of approved design shall be installed wherever practicable.

(4) Frogs, switches and guard rail ends. Frogs, switches and ends of guard rails shall have either patent or wooden foot guard blocking installed.

(5) Slip plates. Slip plates shall be used under all switches and switch points.

(6) Wire for telephone lines. All above ground wire for permanent telegraph or telephone lines used for dispatching must be well strung on insulators and shall be clear of ground and obstruction.

(7) Insulators. Where telephone lines are strung under or near power lines, foot stools mounted on insulators in front of telephone boxes must be used, unless other protection is provided, which affords a substantially equivalent measure of safety.

(8) Trestles. Foundations, pile trestles, framed bent trestles, mud sills, or other framework of all structures shall be adequate to support the maximum imposed loads without exceeding the maximum safe working unit stresses. Such structure shall be maintained in good condition and repair and shall be inspected at least annually by a qualified person and a record maintained of inspection which shall be made available to the division of industrial safety and health on request.

(9) Wooden guard. Outside wooden guard rails shall be installed on all railroad bridges except that outside wooden rails will not be required where inside steel guard rails are used. They shall extend not less than six inches above the top of the ties and shall be bolted or spiked to ties at intervals of not more than five feet. Spacer blocks shall be used unless ties are spiked to stringers, or guard rails are dapped to avoid need for spacer blocks.

(10) Bridge ties. Regular bridge ties of not less than ten feet in length shall be used on all railroad bridges constructed after the effective date of these standards.

(11) Safety platforms. On trestles and bridges whose length exceeds two hundred fifty feet, safety platforms providing safe standing space for two persons shall be installed and spaced so that a person on the trestle or bridge is never more than one hundred twenty-five feet from a safety platform or the end of the bridge or structure.

(12) Bridges and trestles used as footways. All railroad bridges and trestles used habitually as footways shall be provided with a plank walkway not less than twelve inches wide and two inches thick, located between the rails, and shall extend from end to end of bridge or trestle.

(13) Walkway. A suitable substantial walkway not less than three feet wide with handrail shall be installed on bridges or trestles where train crews are required to perform routine inspection or repair work on trains. Substantial platforms and handrails shall be provided where switches are located on bridges or trestles. Adequate clearance shall be allowed for the throw of the switch.

(14) Clearing right of way. All dangerous trees, snags or brush shall be cleared a safe distance from both sides of the track and any obstruction that will create a transportation hazard shall be removed.

(15) Secure footing at switches. Material shall be provided which will promote secure footing at places alongside the track where employees customarily perform duties, such as inspect loads, set brakes by hand or throw switches.

(16) Clearance between tracks. The distance between any main tracks and side track shall be such that there shall be a clearance of four feet between bunk ends and locomotive cabs.

(17) Clearances. The minimum horizontal clearances on each side of the center line of standard gauge mainline railroads shall be eight feet, and the vertical clearance shall be twenty-two feet above the top of each rail (in accordance with standard railroad engineering practices).

(18) Derailers.

(a) Derailers shall be installed and used on all landings, passing tracks and spurs where cars are left on a grade.

(b) These derails shall be located in such a manner that they will be close to standing equipment and will not operate to create a hazard to buildings and other railroad lines.

(c) Derailers shall not be located on the inside rail on a sharp curve.

(d) Derail signs shall be set on both sides of the track even with derailer.

(e) When a derailer is no longer needed, it shall be removed or rendered inoperative.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-525, filed 9/21/79.]

WAC 296-54-527 Truck roads. (1) Truck road grades. Truck road grades shall not be too steep for safe operation of logging or work trucks which operate over them and shall not exceed twenty percent in any case unless a positive means of lowering trucks is provided.

(2) Truck road surfaces.

(a) Truck roads shall be of sufficient width and evenness to insure the safe operation of equipment.

(b) Hazards such as broken planking, deep holes, large rocks, logs, etc., which prevent the safe operation of equipment, shall be immediately corrected.

(c) Road width. On blind curves, truck roads shall be of sufficient width for two trucks to pass, or some type of signal system shall be maintained or speed limited to such that the vehicle can be stopped in one-half the visible distance.

(3) Safe roadways. All danger trees shall be felled a safe distance back from the roadway. Rocks, which present a hazard, shall be cleared from banks. Brush and other materials that obstruct the view at intersections or on sharp curves shall be cleared. (This subsection is applicable only to those portions of roads under direct control of the employer.)

(4) Bridges. All structures shall be adequate to support the maximum imposed loads without exceeding the maximum safe working unit stresses. All bridges shall have an adequate number of reflectors to clearly define the entrance to the bridge. All structures shall be maintained in good condition and repair and shall be inspected at least annually by a qualified authorized person and a record maintained of each inspection, which shall be made available to the division of industrial safety and health, department of labor and industries on request.

(5) Shear rails. Shear rails shall be installed on both outside edges of bridges. The shear rails must be securely fastened and made of material capable of withstanding the impact generated by contact with the wheels of a loaded vehicle. The top of shear rails shall be not less than fifteen inches above the bridge surface. Bridges in use prior to the effective date of these regulations with outside shear rails of a minimum of ten inches high or center type shear rails of not less than five inches high are permissible until such time repairs are needed.

(6) Control of dust on logging roads. Measures shall be instituted which will minimize dust to such degree that visibility will not be reduced beyond the point where an operator can safely operate a vehicle. Vehicle operators shall govern the speed of vehicles by road conditions.

(7) Fenders. Pneumatic-tired equipment shall be equipped with fenders as described in the Society of Automotive Engineers Technical Report J321a.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-527, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-527, filed 9/21/79.]

WAC 296-54-529 Falling and bucking--General. (1) Before starting to fall or buck any tree or snag, the cutter shall survey the area for possible hazards and proceed according to safe practices. Snags which are unsafe to cut shall be blown down with explosives or felled by other safe methods.

(2) Workers shall not approach a faller within reach of the trees being felled unless a signal has been given and acknowledged by the faller that it is safe to approach.

(3) Before falling or bucking any tree, sufficient work area shall be swamped and an adequate escape path shall be made. An escape path shall be used as soon as the tree or snag is committed to fall, roll or slide.

(4) Warning to be given. Fallers shall give timely and adequate warning prior to falling each tree; such warning shall be given with the saw motor at idle or shut off. Persons in the area shall give response to the faller and shall also notify him when they are in the clear.

(5) A competent person, properly experienced in this type of work, shall be placed in charge of falling and bucking operations. Inexperienced workers shall not be allowed to fall timber or buck logs unless working under the direct supervision of an experienced worker.

(6) Snags that have loose bark in the area of the proposed cut shall have the bark removed before being felled. When a snag has elevated loose bark which cannot be removed, the buddy system shall be used to watch for and give warning of falling bark or other hazards.

(7) Tools of fallers and buckers, such as axes, sledges, wedges, saws, spring boards, etc., must be maintained in safe condition. Case hardened or battered sledges and wedges shall not be used. All tools shall be used for their intended purposes.

(8) Trees shall not be felled if the falling tree can endanger any worker or strike any line or any unit in the operation.

(9) When practical, strips shall be laid out so cutters face out into opening when starting strip, and all trees shall be felled into the open whenever conditions permit.

(10) Trade leaners. Cutters shall not fall into another strip; leaners on the line shall be traded.

(11) When there is danger from kickback of a sapling, the same must be either undercut or felled.

(12) Cutters shall place an adequate undercut and leave sufficient holding wood to insure the tree will fall in the intended direction. When required, mechanical means shall be used to accomplish this objective.

(13) Cutters shall be careful their chopping range is unobstructed.

(14) Cutters shall confer with their supervisor regarding a safe manner of performing the work and in unusually hazardous situations shall not proceed with the work until their method has been approved by their supervisor.

(15) The person in charge of cutting crews shall regularly inspect the work of the cutting crews and shall be responsible for seeing the work is performed in a proper and safe manner.

(16) Common sense and good judgment must of necessity govern the safety of cutters as affected by weather conditions. At no time shall they work if wind is strong enough to prevent the falling of trees in the desired direction or when vision is impaired by dense fog or darkness.

(17) Cutters shall be assigned to work in locations where they are in contact with others or their welfare shall be checked on as provided for by WAC 296-54-507(2).

(18) Persons in charge of cutting crews shall account for all persons in their crews being on hand when work ceases as provided for by WAC 296-54-507(3).

(19) All fallers and buckers shall have a current first-aid card.

(20) All fallers and buckers shall carry or have with them in near proximity at all times, an axe, a minimum of two wedges, a whistle and a first-aid kit. The whistle shall be carried on their person.

(21) Special precautions shall be taken to prevent trees from falling into power lines. If it appears that a tree will hit a power line, the power company shall be notified before it is attempted to fall the tree. If an unsuspected tree does contact a power line, the power company shall be notified immediately and all persons shall remain clear of the area until the power company personnel advise that conditions have been made safe to resume operations.

(22) Wedges shall be of soft metal, hardwood or plastic.

(23) Wedges shall be driven with a hammer or other suitable tool. Double-bitted axes or pulaskies shall not be used for this purpose.

(24) While wedging, fallers shall watch for falling limbs or other material that might be jarred loose. Cutting of holding wood in lieu of using wedges is prohibited.

(25) Undercuts are required except in matchcutting, and shall be large enough to safely guide trees and eliminate the possibility of splitting. Trees with no perceptible lean having undercuts to a depth of one-fourth of the diameter of the tree with a face opening equal to one-fifth of the diameter of the tree, will be assumed to be within reasonable compliance with this rule. Swing cuts are prohibited except by an experienced person.

(26) Undercuts shall be completely removed except when a dutchman is required on either side of the cut.

(27) Backcuts shall be as level as possible and shall be approximately two inches higher than the undercut, except in tree pulling.

(28) Trees with face cuts or backcuts shall not be left standing. When a tree is not completely felled, the faller shall clearly mark the tree, shall discontinue work in the hazardous area and notify his immediate supervisor. The supervisor shall be responsible for notifying all workers who might be endangered and shall take appropriate measures to ensure that the tree is safely felled before other work is undertaken in the hazardous area.

(29) To avoid use of wedges, which might dislodge loose bark or other material, snags shall be felled in the direction of lean unless other means (mechanical or dynamite) are used.

(30) Lodged trees shall be clearly marked and identified by a predetermined method and all persons in the area shall be instructed not to pass or work within two tree lengths of such trees except to ground them.

(31) Work areas shall be assigned so that a tree cannot fall into an adjacent occupied work area. The distance between work areas shall be at least twice the height of the trees being felled. A greater distance may be required on downhill slopes depending on the degree of the slope and on the type of trees and other considerations.

(32) Where felled trees are likely to roll and endanger workers, cutting shall proceed from the bottom toward the top of the slope, and performed uphill from previously felled timber.

(33) Cutters shall not be placed on a hillside immediately below each other or below other operations where there is probable danger.

(34) Fallers shall be informed of the movement and location of buckers or other cutters placed, passing or approaching the vicinity of trees being felled.

(35) A flagperson(s) shall be assigned on roads where hazardous conditions are created from falling trees. Where there is no through traffic, such as on a dead end road, warning signs or barricades shall be used.

(36) No tree or danger tree shall be felled by one cutter where and when the assistance of a fellow cutter is necessary to minimize the dangers or hazards involved.

(37) Cutters shall be in the clear as the tree falls.

(38) Undercuts and backcuts shall be made at a height above the highest ground level to enable the cutter to safely begin the cut, control the tree, and have freedom of movement for a quick escape to be in the clear from a falling tree.

(39) When falling, a positive means, method or procedure that will prevent accidental cutting of necessary holding wood shall be established and followed. Particular care shall be taken to hold enough wood to guide the tree or snag and prevent it prematurely slipping or twisting from the stump.

(40) The undercut shall not be made while buckers or other workers are in an area into which the tree could fall.

(41) Matchcutting should not be permitted and shall be prohibited for trees larger than six inches in diameter breast high.

(42) The tree (and root wad if applicable) shall be carefully examined to determine which way the logs (and root wad) will roll, drop, or swing when the cut is

completed. No worker shall be allowed in this danger zone during cutting.

(43) Logs shall be completely bucked through whenever possible. If it becomes hazardous to complete a cut, then the log shall be marked and identified by a predetermined method. Rigging crews shall be instructed to recognize such marks and when possible, cutters shall warn the rigging crew of locations where such unfinished cuts remain.

(44) Cutters shall give timely warning to all persons within range of any log which may have a tendency to roll after being cut off.

(45) Propping of logs or trees as a means to protect workers downslope from the logs or trees, shall be prohibited.

(46) Logs shall not be jackstrawed when being bucked in piles or decks at a landing.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-529, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-529, filed 9/21/79.]

WAC 296-54-531 Falling and bucking--Power saws and power equipment. (1) Operators shall inspect chain saws daily to ensure that handles and guards are in place, and controls and other moving parts are functional.

(2) Fuel outdoors. The chain saw shall be fueled outdoors at least fifty feet from persons smoking or from other potential sources of ignition.

(3) Chain saws shall not be operated unless equipped with a muffler.

(4) Idler end of power chain saw blade on all two-man machines shall be adequately guarded.

(5) Combustion-engine type power saws shall be equipped with a positive means of stopping the engine.

(6) Electric power saws shall be equipped with an automatic (deadman type) control switch. Saws with faulty switches shall not be used.

(7) Unless the carburetor is being adjusted, the saw shall be shut off before any adjustments or repairs are made to the saw, chain or bar.

(8) Combustion-engine type power saws shall be equipped with a clutch.

(9) The chain saw clutch shall be properly adjusted to prevent the chain from moving when the engine is at idle speed.

(10) Power chain saws with faulty clutches shall not be used.

(11) The bar shall be handled only when the power chain saw motor is shut off.

(12) Power chain saws shall have the drive end of the bar guarded.

(13) Combustion-engine driven power saws shall be equipped with an automatic throttle control (deadman type), which will return the engine to idle speed upon release of the throttle (idle speed is when the engine is running and the chain does not rotate on the bar).

(14) When falling of tree is completed, the power saw motor shall be at idle or shutoff. Where terrain or brush creates a hazardous condition, the power saw motor shall be shutoff while the operator is traveling to the next cut. The power saw motor shall also be shutoff while fueling.

(15) Saw pinching and subsequent chain saw kickback shall be prevented by using wedges, levers, guidelines, and saw placement, or by undercutting.

(16) Cutters shall not use the chain saw to cut directly overhead or at a distance that would require the operator to relinquish a safe grip on the saw.

(17) Reserve fuel shall be handled and stored in accordance with WAC 296-24-37009.

(18) Hand-held files shall be equipped with a handle.

(19) Only experienced cutters shall buck windfalls.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-531, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-531, filed 9/21/79.]

WAC 296-54-533 Falling and bucking--Springboards and tree jacking. (1) Springboards shall be of clear, straight-grained sound stock of sufficient length, width and strength and shall be replaced when they will no longer safely support the expected load at the extreme end.

(2) Springboard irons shall be well lipped and firmly attached with bolts or a means of attachment furnishing equivalent strength.

(3) Two workers shall be present when falling any tree or snag when springboards are used.

(4) Power saw chains shall be stopped while shifting springboards.

(5) Jack plates shall be used with hydraulic tree jacks and the base plate shall be seated on solid wood inside the bark ring as close to level as possible.

(6) Two workers shall be present at all times during the use of tree jacks.

(7) Wedges shall be used as a follow-up method while using tree jacks. The wedges shall be continuously moved in as the tree is jacked.

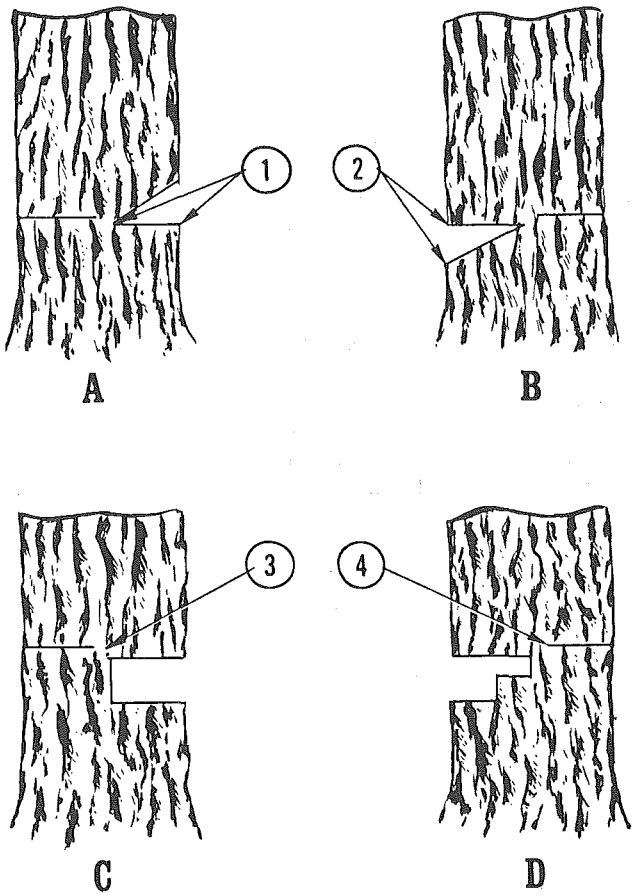
(8) Effective January 1, 1980, all hydraulic tree jacks shall be equipped with an operable velocity fuse (check valve) and the pump shall be equipped with an operable pressure gauge.

(9) When tree jacking, the facecut shall be nominally one-fourth the diameter of the tree.

(10) The vertical height of the facecut shall be not less than one-fifth of the diameter of the tree when tree jacking.

Note: See Figure No. 1, for illustrations of undercuts.

UNDERCUTS



(A) **Conventional undercut.** Can be made with parallel saw cut and axe diagonal cut or both cuts with the saw. Generally used on trees of small diameter.

(B) **Both cuts made with the saw.** Leaves square-end log. Same as (A), except that waste is put on the stump.

(C) **Two parallel cuts with the saw.** The material between the cuts is chipped out with an axe-adz (pulaski) combination. Used on trees over 30 inches in diameter.

(D) **Three parallel cuts with the saw, leaving a step.** Same in principle as (C). Used on trees of very large diameters.

Item	
1	Undercut depth
2	Undercut height
3	Holding wood
4	Backcut

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-533, filed 9/21/79.]

WAC 296-54-535 Tree pulling. (1) The cutter shall be responsible for determining if a tree can be safely pulled. If, for any reason, the cutter believes the tree pulling cannot be completed safely, the tree shall be conventionally felled.

(2) When using radio positive radio communications shall be maintained at all times between the tree pulling machine and cutter when tree pulling. An audible signal shall be blown when the initial pull is made on the tree and the line is tightened. Hand signals, in lieu of radio communications and an audible signal, may be used only if the cutter is clearly visible to the tree puller operator.

(3) A choker, choker bell, or a line and sleeve shackle shall be used as the means of attachment around the tree when tree pulling. The bight on the line shall be only that necessary to hold the choker or line around the tree.

(4) The tree pulling machine shall be equipped with a torque converter, fluid coupler, or an equivalent device to insure a steady even pull on the line attached around the tree.

(5) The tree pulling line shall have as straight and direct path from the machine to the tree as possible. Physical obstructions which prevent a steady even pull on the tree pulling line shall be removed or the line shall be rerouted.

(6) Siwashing, in lieu of a block, in order to change tree pulling lead, is prohibited.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-535, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-535, filed 9/21/79.]

WAC 296-54-537 Mechanized falling. (1) When using selfpropelled mobile falling devices, a watchman and/or warning signs shall be posted at appropriate locations indicating that devices of this type are being used to fall trees.

(2) Self-propelled mobile falling equipment used for falling trees shall be designed in a manner or shall have auxiliary equipment installed which will cause the tree to fall in the intended direction.

(3) Mechanized falling shall be conducted in such a manner as not to endanger persons or equipment.

(4) Where a mechanized feller incorporates a cab structure having a single entrance door, it shall be equipped with an alternate means of escape from the cab should the door be blocked in the event of vehicle rollover or fire. Cab doors shall be fitted with latches operable from both sides of the door.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-537, filed 9/21/79.]

WAC 296-54-539 Climbing equipment and passline. (1) Standard climbing equipment shall be furnished by the employer; however, this shall not be construed to mean that the climber may not use his own equipment, provided it meets the following standards and is permitted by the employer. The climbing ropes shall be of steelcore type. The climber may fasten his rope by passing it through "D" rings fastened to the belt and around his body before tying it to itself. When topping standing trees, it is recommended that a steel chain of 3/16-inch or larger, with appropriate fittings attached, shall be used in addition to the climbing rope. All climbing equipment shall be maintained in good condition. An extra set of climbing equipment shall be kept at the climbing operation and another person with climbing experience shall be present.

(2) A person shall ride only the passline to thread lines, oil blocks or to inspect rigging.

(3) No one shall work directly under a tree except when directed by the climber. Warning shall be given prior to intentionally dropping any objects or when objects are accidentally dropped.

(4) Running lines shall not be moved while the climber is working in the tree, except such "pulls" as he directs and are necessary for his work.

(5) One experienced person shall be dispatched to transmit the climber's signals to the machine operator and shall not otherwise be occupied during the time the climber is in the tree, nor shall the machine operator be otherwise occupied while the climber is using the passline. The designated signalman shall position himself clear of hazards from falling, flying or thrown objects.

(6) Long or short splices and knots in passline are not permitted. Chains used in passlines shall be in good condition and shall not contain cold shuts or wire strands.

(7) The climber shall be an experienced logger with proper knowledge of logging methods and the safety of rigging spar and tail trees.

(8) Trees shall not be topped during windy weather.

(9) At no time shall topping, rigging–up, or stripping work be done when visibility is impaired.

(10) When the friction lever and passline drum is on the opposite side of the machine from the operator, an experienced person shall operate the friction lever while the engineer operates the throttle. While being used, the passline drum shall be properly attended by another person to guide the passline onto the passline drum with a tool suitable for the purpose.

(11) The use of a gypsy drum for handling persons in the tree is prohibited.

(12) Danger trees leaning towards and within reach of landings, roads, rigging or work areas shall either be felled before the regular operations begin or work shall be arranged so that workers will not be exposed to hazards involved.

(13) Noisy equipment such as power saws, tractors and shovels shall not be operated around the area where a climber is working when such noise will interfere with the climber's signals.

(14) Climbing and passline equipment shall not be used for other purposes.

(15) Defective climbing equipment shall be immediately removed from service.

(16) The climber shall be equipped with a climbing equipment assembly having a breaking strength of not less than five thousand four hundred pounds.
The equipment shall include:

(a) A safety belt with double "D" rings;

(b) Steel spurs long and sharp enough to hold in any tree in which they are used; and

(c) A climbing rope made of wire–core hemp, wire or chain construction.

(17) When the climber is using a chain saw in the tree, the climbing rope shall be made of material that cannot be severed by the saw.

(18) Lineman hooks shall not be used as spurs.

(19) When power saws are used in topping or limbing standing trees, the weight of the saw shall not exceed thirty pounds.

(20) Tools used by the climber, except the power saw, shall be safely secured to his belt when not in use.

(21) Snaps shall not be used on a climber's rope unless a secondary safety device between the belt and snap is used.

(22) A climber's rope shall encircle the tree before the climber leaves the ground except when the climber is riding the passline.

(23) While the climber is working in the tree, persons shall keep at sufficient distance from the tree to be clear of falling objects.

(24) When used, passline fair–leads shall be kept in alignment and free from fouling at all times.

(25) Spikes, used by the climber as a temporary aid in hanging rigging, shall be removed before the tree is used for logging.

(26) Loose equipment, rigging or material shall either be removed from the tree or securely fastened.

(27) All spar trees shall be equipped with passlines that shall:

(a) Be not less than 5/16–inch and not be over 1/2–inch in diameter;

(b) Not be subjected to any sawing on other lines or rigging, and kept clear of all moving lines and rigging;

(c) Be of one continuous length and in good condition with no splices, knots, molles, or eye–to–eye splices between the ends;

(d) Be long enough to provide three wraps on the drum before the climber leaves the ground.

(28) Drums used for passlines shall have sufficient flange depth to prevent the passline from running off the drum at any time.

(29) Passline chains shall:

(a) Be not less than 5/16–inch alloy or 3/8–inch high test chain and shall not contain cold shuts or wire strands;

(b) Be attached to the end of the passline with a screw–pin shackle, a slip–pin shackle with a nut and molle, or a ring large enough to prevent going through the pass block; and

(c) Be fitted with links or rings to prevent workers from being pulled into the passline block.

(30) Pass blocks shall:

(a) Be inspected before placing in each spar and the necessary replacements or repairs made before they are hung;

(b) Have the shells bolted under the sheaves;

(c) Have the bearing pin securely locked and nuts keyed or the block be of the type which positively secures the nut and pin;

(d) Equipped with sheaves not less than six inches in diameter; and

(e) Comply with applicable portions of WAC 296–54–543(6) pertaining to blocks.

(31) When workers are required to go up vertical metal spars, passlines, chains and blocks shall be provided and used.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-539, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-539, filed 9/21/79.]

WAC 296-54-541 Selection of spar, tail and intermediate trees. (1) Douglas fir or spruce shall be used as spar, tail, or intermediate support trees when they are available. If other species must be used, additional guylines, tree plates, or other precautions shall be taken to insure the tree will withstand the strains to be imposed.

(2) Spar, tail and intermediate support trees shall be examined carefully for defects before being selected. They shall be sound, straight, green and of sufficient diameter to withstand the strains to be imposed.

(3) Trees having defects that impair their strength shall not be used for spar, tail or intermediate support trees. Raised trees shall be identified and marked as such.

(4) Before raising spar trees, dummy trees shall be topped and guyed with three guylines equivalent in breaking strength to the mainline.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-541, filed 9/21/79.]

WAC 296-54-543 General requirements. (1) Rigging.

(a) Rigging shall be arranged and operated so rigging or loads will not foul, or saw against lines, straps, blocks or other equipment.

(b) A thorough inspection of all blocks, straps, guylines and other rigging shall be made before they are placed in positions for use. Inspections shall include an examination for damaged, cracked or worn parts, loose nuts and bolts, and of lubrication, and the condition of straps and guylines. All necessary repairs or replacements for safe operation shall be made before the rigging is used.

(c) Rigging equipment, when not in use, shall be stored so as to not present a hazard to employees.

(d) Running lines shall be arranged so workers will not be required to work in the bight. When this is not possible, workers shall move out of the bight of lines before the lines are tightened or moved.

(2) Shackles.

(a) Shackles with screw pins should have either a molle or cotter key when used to fasten guylines to spar trees.

(b) All shackles used to hang blocks, jacks, or rigging on trees or loading booms shall have the pins fastened by a nut secured with a cotter pin or molle. When used, molles shall be as large as the pin hole will accommodate and with the loose ends rolled in.

(c) The size of the opening between the jaws of shackles used to hang blocks, jacks, rigging, and for joining or attaching lines, shall not be more than one inch greater than the size of the rope, swivel, shackle, or similar device to which it is attached.

(d) All shackles used for mainline or skyline extensions shall be of a type designed for that purpose.

(e) Shackles used other than for mainline extension connections, shall be of the screw-pin type or with the pin secured by a nut and cotter pin or molle, except as specified elsewhere for specific purposes.

(f) Shackles, swivels, links and tree plates shall be replaced or repaired when they will not safely support the imposed strains of their intended use.

(g) Shackles shall not be loaded in excess of the working load recommended by the manufacturer.

(h) All shackles must be made of forged steel or material of equivalent strength and one size larger than the line it connects.

(3) Straps.

(a) Safety straps of appropriate size shall be placed on all high lead blocks; also other blocks whenever practicable. Safety straps shall be shackled, with closed end of shackle up, to a guyline which extends as near as possible at right angles with power unit, but shall not be placed on a guyline having an extension within one hundred feet of the tree. When the top guyline on which the safety strap of the high lead block is fastened is changed, safety strap must be attached to another guyline or loosened guyline tightened after change.

(b) All tree straps shall be at least 1/4-inch larger than the pulling line. If impossible to use safety strap, all tree straps shall be 1/2-inch larger than the pulling line.

(c) All straps in back of show must be as large as the running line.

(d) All blocks other than passline and straw line lead blocks shall be hung in both eyes or "D's" of straps. Threading eye through eye is prohibited.

(e) Skyline jack shall not be hung by double strap through shackle and hanging jack in two eyes.

(f) Tree straps shall initially be made of new wire rope when made up. They shall be replaced when there is evidence of damage or broken wires.

(g) A guyline safety strap or equivalent device shall be installed at the top of metal spars to prevent guylines from falling more than five feet in case of structural or mechanical failure of the guyline attachment.

(h) Metal spar guyline safety straps or equivalent devices shall be equal to the strength of the guyline.

(i) Nylon straps may be used in accordance with manufacturer recommendations.

(j) Nylon straps shall be removed from service when the wear reaches the limits prescribed by the manufacturer. The person responsible for inspecting the condition of rigging shall be aware of these limits.

(4) Guylines.

(a) All component parts of the guyline system on head tree shall be of equal or greater strength than the mainline and guylines shall be properly spaced to effectively oppose the pull of the mainline.

(b) Guylines on wood spar trees shall be secured to solid stumps with not less than two and one-half complete wraps with at least six staples or eight railroad spikes driven solidly into sound wood on the first and last wrap. The bark shall be removed and the stump adequately notched or other equivalent means shall be used to prevent movement of the line on the stump or tree. Guyline stumps shall be inspected periodically. Guylines may be secured to properly installed "deadmen" when suitable stumps are not available. It is permissible, on

the tail tree, to secure the guylines by placing three wraps around a tree or stump and securing them properly by use of clamps.

(c) When a mainline of 7/8–inch or less is used, the spar shall be supported by at least five top guylines or other positive means of supporting the spar.

(d) When tail hold on skyline is choked on stump, there shall be no excessive bight against shackle.

(e) In removing guylines and skylines from stumps, etc.:

(i) A reversed safety wrap shall be put on and secured before loosening the last wrap.

(ii) An experienced person shall be in charge loosening guylines or skylines using proper precautions, and giving warning before lines are released.

(iii) Safety holdbacks shall be used when necessary for the safety of workers.

(iv) Powder or power shall be used for releasing the last wrap on skylines.

(f) Guylines shall be used with any logging equipment when required by the equipment manufacturer.

(g) Guying shall not be less than the minimum recommended by the equipment manufacturer.

(h) Top guys on vertical metal and wooden spars which require five or more guylines shall be so arranged that at least three guys oppose the pull of the load, with at least one guyline anchored adjacent to the yarding quarter.

(i) Guylines shall be of plow steel or better material, and shall be maintained in good condition.

(j) When side blocking or lateral yarding, lateral stability to the head spar tree shall be insured by guylines sufficient in number, breaking strength and spacing.

(k) All guylines shall be kept well tightened while the spar, tree, equipment or rigging they support is in use.

(l) All trees that interfere with proper alignment, placement or tightening of guylines shall be felled.

(m) Guylines shall be hung in a manner to prevent a bight or fouling when they are tightened.

(n) All spliced guyline eyes shall be tucked at least three times.

(o) Extensions to guylines shall be:

(i) Equal in strength to the guyline to which they are attached; and

(ii) Connected only by a shackle connecting two spliced eyes or by double–end hooks. Connections shall have at least one and one–half times the strength of the guyline.

(p) Portable metal spars and their appurtenances shall be inspected by a qualified person each time the spar is lowered and at any time its safe condition is in doubt. When damage from over–stress is noted or suspected, the part in question shall be inspected by a suitable method and found to be safe, or the part repaired or replaced before the spar is again used.

(q) No person shall go up a raised metal spar unless suitable passline equipment is provided and used.

(r) Repairs, modifications or additions which affect the capacity or safe operation of metal spars shall be made only under the direction of a registered engineer and within the manufacturer's recommendations.

(i) In no case shall the original safety factor of the equipment be reduced.

(ii) If such modifications or additions are made, the identification plate required by WAC 296–54–553(1) shall reflect such changes.

(s) When using skylines 7/8–inch or smaller, tail trees shall be supported by at least two guylines when the rigging is placed on the tail tree at a height greater than five times the tree diameter (dbh) or higher than ten feet from the highest ground point, whichever is lower.

(t) When using skylines one inch or larger, tail trees shall be supported by at least four guylines when the rigging is placed on the tail tree at a height greater than five times the tree diameter (dbh) or higher than ten feet from the highest ground point whichever is lower.

(u) Tail trees shall be supported by additional guylines if necessary to insure stability of the tree.

(v) Wood head spar trees shall be guyed as follows:

(i) All spar trees one hundred ten feet and over in height shall be provided with a minimum of six top guys and three buckle guys, each of which shall be substantially equal in strength to the strength of the mainline. This requirement, however, shall not be construed as applying where more than three buckle guys are specifically required.

(ii) Spar trees used for loading and yarding at the same time, or for loading and swinging at the same time, or supporting a skyline yarding system, shall have not less than six top and four buckle guylines each of which shall be substantially equal in strength to the strength of the mainline.

(iii) Spar trees under one hundred ten feet high used only for yarding with heavy equipment (over 7/8–inch mainline) shall have not less than six top guys each of which shall be substantially equal in strength to the strength of the mainline.

(iv) Spar trees used for yarding with light equipment (7/8–inch or smaller mainline) shall be guyed in such a manner that strains will be imposed on not less than two guylines. If less than five top guys are used, guylines shall be at least 1/4–inch larger than the mainline.

(v) More guylines shall be added if there is any doubt as to the stability of any spar tree, raised tree, tail trees and lift trees, or other equipment or rigging they support.

(w) Guylines shall alternately be passed around the wood spar in opposite directions to prevent twisting of the spar.

(x) Guylines shall be attached to the upper portion of the wood spar by means of shackles.

(y) A–frames shall be guyed by at least two quarter–guylines and one snap guyline or equivalent means to prevent A–frame from tipping back.

(5) Anchoring.

(a) Stump anchors used for fastening guylines and skylines shall be carefully chosen as to position, height and strength. When necessary, stump anchors shall be tied back in a manner that will distribute the load.

(b) Stump anchors shall be barked where attachments are to be made, or devices designed to accomplish the same purpose shall be used.

(c) Stump anchors shall be notched to a depth not greater than one and one-half times the diameter of the line to be attached.

(d) Deadman anchors may be used if properly installed. Guylines shall not be directly attached to deadman anchors. Suitable straps or equally effective means shall be used for this purpose.

(e) Rock bolts and other types of imbedded anchors may be used if properly designed and installed.

(f) Stumps, trees and imbedded type guyline anchors shall be regularly inspected while the operation is in progress. Insecure or hazardous anchors shall be immediately corrected.

(g) Workers shall not stand close to the stump, or in the bight of lines as the guyline or wraps are being tightened.

(6) Blocks.

(a) All blocks shall:

(i) Not be used for heavier strains or lines than those for which they are constructed;

(ii) Be fitted with line guards and shall be designed and used in a manner that prevents fouling, with the exception of special line blocks not designed with line guards;

(iii) Be kept in proper alignment when in use;

(iv) Have bearing and yoke pins of a material that will safely withstand the strains imposed and shall be securely fastened;

(v) Have sheaves of a size designed for the size of the wire rope used.

(b) Blocks with cracked or excessively worn sheaves shall not be used.

(c) Lead blocks used for yarding, swinging, loading and unloading used in wood spars shall:

(i) Be of the type and construction designed for this purpose;

(ii) Be bolted with not less than two bolts through the shells below the sheaves in a manner that will retain the sheave and line in case of bearing pin failure (this does not apply to haulback lead blocks); and

(iii) Mainline blocks shall have a sheave diameter of not less than twenty times the diameter of the mainline.

(d) Block bearing shall be kept well lubricated.

(e) All blocks must be of steel construction or of material of equal or greater strength and so hung that they will not strike or interfere with other blocks or rigging.

(f) All pins in blocks shall be properly secured by "Molle Hogans" or keys of the largest size the pin hole will accommodate. When blocks are hung in trees, threaded pins and nuts shall be used.

(g) Sufficient corner or tail blocks to distribute the stress on anchors and attachments shall be used on all logging systems.

(h) Blocks used to lead lines directly to yarding, loading or unloading machines other than passline or strawline blocks shall be hung by the following method: In both eyes or "D"s of straps; threading eye through eye is prohibited.

(i) Tail, side or corner blocks used in yarding shall be hung in both eyes of straps.

(7) Wire rope.

(a) Wire rope shall be of the same or better grade as originally recommended by the equipment manufacturer.

(b) Wire rope shall be removed from service when any of the following conditions exist:

(i) In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay;

(ii) Wear of one-third the original diameter of outside individual wires. Kinking, crushing, bird-caging, or any other damage resulting in distortion of the rope structure;

(iii) Evidence of any heat damage from any cause;

(iv) Reductions from nominal diameter of more than 3/64-inch for diameters to and including 3/4-inch, 1/16-inch for diameters 7/8-inch to 1-1/8-inch, inclusive, 3/32-inch for diameters 1-1/4-inches to 1-1/2-inches inclusive;

(v) In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection;

(vi) In standing ropes, when twelve and one-half percent of the wires are broken within a distance of one wrap (lay); and

(vii) Corroded, damaged or improperly applied end connections.

(c) Wire rope shall be kept lubricated as conditions of use require.

(8) Splicing wire rope.

(a) Marlin spikes or needles in good condition and large enough for the size of the line being spliced, shall be used for splicing.

(b) When available, and practical to use, a patented wire cutter shall be used. If using a wire axe to cut cable, the hammer used to strike the axe shall be made of soft nonspalling type material. Eye and face protection shall be worn in accordance with WAC 296-54-511(2).

(c) Short splices, eye to eye splices, cat's paws, knots, molles and rolled eyes are prohibited except for use in the moving of slack lines. Knots will be permitted for use on single drum tractors and grapple pick-up lines when properly tied.

(d) Wire rope 1/2-inch or less in diameter may be tucked two times provided the rope is used only as straw line.

(e) Splices other than eye splices in lang lay lines are prohibited. Eye splices in lang lay lines shall be tucked at least four times.

(f) Long splices shall be used for permanently joining "regular lay" running lines.

(g) When U-bolt wire rope clips (clamps) are used to form eyes on high strength wire rope, an additional clip (clamp) for each grade of line above improved plow steel shall be used over and above the following table: (See Figure No. 2, following this section, for proper application of wire rope clips.)

Improved Plow Steel Diameter of Rope	Number of Clips Required Drop Forged	Other Material	Minimum Space Between Clips
3/8 to 5/8 inch	3	4	3–3/4 inches
3/4 inch	4	5	4–1/2 inches
7/8 inch	4	5	5–1/4 inches
1 inch	5	6	6 inches
1–1/8 inch	6	6	6–3/4 inches
1–1/4 inch	6	7	7–1/2 inches
1–3/8 inch	7	7	8–1/4 inches
1–1/2 inch	7	8	9 inches

(h) All line eye splices shall be tucked at least three full tucks. D's and knobs are recommended for line ends.

(i) Two lines may be connected by a long splice, or by shackles or patent links of the next size larger than the line being used where practical. Double "Molle Hogans" may be used on drop lines only and single "Molle Hogans" may be used on strawline.

(j) Splicing of two lines together for loading line or pass line is prohibited.

(k) Safe margin of line must be used for making long splices. The following table shows comparative safe lengths as to size of cable in making long splices:

Rope Diameter	To Be Unravelled	Total Length
1/4"	8'	16'
3/8"	8'	16'
1/2"	10'	20'
5/8"	13'	26'
3/4"	15'	30'
7/8"	18'	36'
1 "	20'	40'
1–1/8"	23'	46'
1–1/4"	25'	50'
1–3/8"	28'	56'
1–1/2"	30'	60'
1–5/8"	33'	66'
1–3/4"	35'	70'
1–7/8"	38'	76'
2 "	40'	80'

(9) Miscellaneous requirements.

(a) All lines, straps, blocks, shackles, swivels, etc., shall be inspected frequently and shall be used only when found to be in good condition. Such items shall be of sufficient size and strength as to safely withstand the stress which can be imposed by the maximum pull of the power unit against such equipment or devices as rigged or used in that particular logging operation.

(b) When used or second-hand cables are purchased, they shall not be used for any purpose until inspection determines they will withstand the maximum imposed strain.

(c) Skyline shall be anchored by placing three full wraps around tail hold and staples or spikes shall be used to securely hold each wrap or choked and secured with a shackle or three wraps and at least three clamps securely tightened.

(d) When using haulback lines greater than 7/8-inch diameter on interlocking drum-type yarders, additional precautions shall be taken to prevent the corner blocks or tail blocks from dislodging the anchors to which the blocks are secured.

(e) Where "dutchman" is used, either for yarding or on skyline, a block of heavy construction must be used. Regular tree shoe or jack may be used for "dutchman" on skyline. Cable must be fastened securely.

(f) Choker drops shall be connected to the butt rigging by knobs or shackles. The use of molles or cold shuts is prohibited in all components of the butt rigging. All butt rigging shall be designed to prevent loss of chokers and defective swivels shall not be used. Open hooks shall not be used to connect lines to the buttrigging.

(g) When heel tackle is fastened near machine, safety line must be placed in such manner that in case of breakage, lines shall not strike power unit and endanger operator.

(h) Only in case of necessity shall any metallic object be driven into a log. The metal must be removed immediately when splice or other work is completed. Stumps shall be used whenever possible for splicing.

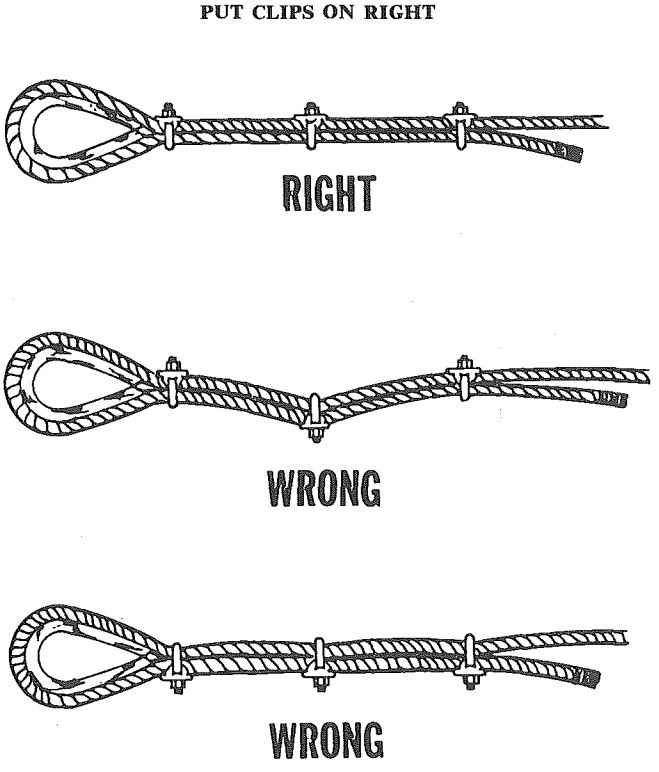


Figure No. 2

Clips should be spaced at least six rope diameters apart to get the maximum holding power and should always be attached with the base or saddle of the clip against the longer or "live" end of the rope. The "U" bolt goes over the dead end. This is the only right way. Do not reverse the clips or stagger them. Otherwise the "U" bolt will cut into the live rope when the load is applied. After the

rope has been used and is under tension, the clips should again be tightened to take up any looseness caused by the tension reducing the rope diameter. Remember that even when properly applied, a clip fastening has only about eighty percent of the strength of the rope and far less than that when on wrong.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-543, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-543, filed 9/21/79.]

WAC 296-54-545 Rigging--Wood spar trees. (1) Wood spar trees shall be of sound material of sufficient size and strength to withstand any stresses which may be imposed by any equipment used for that specific operation. The top of the tree shall extend not more than sixteen feet above the top guylines on spar trees over fifty feet in height. Spar trees less than fifty feet in height shall extend no more than eight feet above the top guylines. School marms used as spar trees shall be topped at the forks. Spar trees, except cedar, must be barked where guylines, straps, bull blocks and tree plates are placed.

(2) Spar trees must be topped and limbs must be cut off close so that running lines will not foul or saw on protruding knots.

(3) At least four tree plates shall be placed under top guylines on spar trees over fifty feet in height and at least three tree plates shall be used on spar trees less than fifty feet in height.

(4) Tree plates shall be equipped with lugs or other suitable means of holding them in place.

(5) When spar trees are raised, stumps used for snubbing shall be properly notched. Guylines shall be held by some mechanical means. Snubbing by hand is prohibited.

(6) All rub trees shall be limbed and topped.

(7) Guylines.

(a) Wood spar trees using a line greater than 7/8-inch and used as loading and yarding trees shall have at least six top guys and four buckle guys, providing a sail guy is used.

(b) Wood spar trees using a mainline greater than 7/8-inch and used only as yarding trees shall have at least six top guys and, at least three buckle guys shall be used.

(c) Wood spar trees used for loading only with crotch line, spreader bar or swinging boom shall have at least four top guys and, at least three buckle guys shall be used.

(d) Wood spar trees used for any skyline system of logging shall have additional guylines as are necessary to assure rigidity of tree at skyline jack, skidding block, receding and transfer line blocks, and loading rigging.

(e) Wood spar trees used for transfer shall have at least five top guys and, at least three buckle guys shall be used.

(f) When high lead block is hung below buckle guys, at least three top guys of equal strength to the mainline shall be used to keep the top from swaying.

(g) When buckle guys are required, they shall be installed on the tree where they will provide the maximum effectiveness.

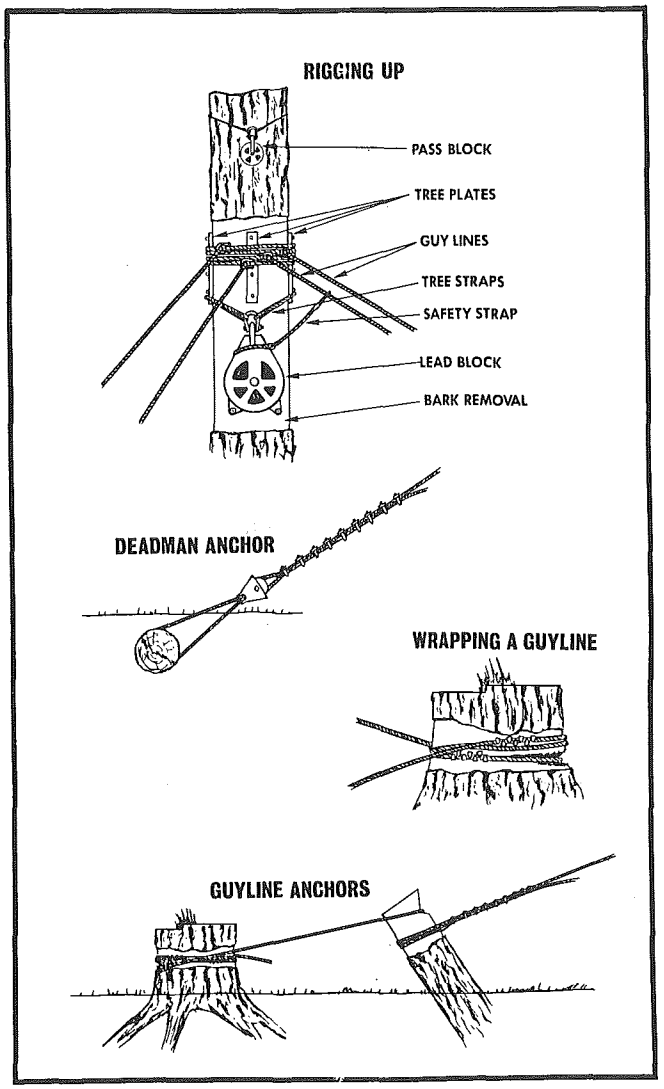
(8) Loose material such as bark, spikes, straps or chains not in use and slabs caused by bumping logs of chafing straps must be removed from the spar tree. Heavy bark shall be removed from trees used for a permanent installation.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-545, filed 9/21/79.]

WAC 296-54-547 Rigging--Tail tree. (1) No work shall continue on tail tree while the climber is working on the head tree or vice versa, if trees are connected by any line.

(2) Tail trees shall be adequately guyed to withstand any stress to which the tree may be subjected. Live (slackline) or standing skylines may be anchored to the base of standing trees only if no part of the tree will enter the work area (cutting unit) if pulled over. The guyline shall be anchored as low as possible to the base of the tree. If using a live (slackline) standing or running (Grabinski) skyline, the tail tree need not be topped provided the slackline or skyline passes through a jack or block on the tree before being anchored. At least two guylines shall be installed to support the tail tree and may be anchored to the base of standing trees if the above conditions are complied with. Attaching the end of the skyline or slackline to the base of the tail tree is prohibited.

Note: See Figure No. 3 for rigging illustrations.



[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-547, filed 9/21/79.]

WAC 296-54-549 Lines, straps and guyline attachments--Steel spars. (1) When in use, steel tower guyline safety straps shall have a minimum amount of slack.

(2) A safety strap shall be installed on steel towers at the bight of the guylines to prevent the guylines from falling in the case of failure of guyline attachments, guyline lug rings or collar plates, where such exist. Such devices shall have a breaking strength at least equivalent to that of the guylines.

(3) The use of cable clips or clamps for joining the ends of steel tower guylines safety straps is prohibited, unless used to secure end of rolled eye.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-549, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-549, filed 9/21/79.]

WAC 296-54-551 Yarding, loading and skidding machines--General requirements. (1) Yarding, loading and skidding machines shall be operated only by experienced authorized personnel, except that inexperienced personnel may operate machines in accordance with WAC 296-54-515(2).

(2) Overhead protection and other barriers shall be installed to protect the operator from lines, limbs and other moving materials on or over all yarding, loading or skidding machines. Construction shall be so the view of the operator is not impaired. Barriers shall consist of metal screen constructed of 1/4-inch diameter woven wire material with maximum two inch openings or 3/4-inch diameter steel rod with eight inch maximum openings. Such barriers shall be installed no closer than four inches to the glass.

(3) When using a yarder, loader or skidding machine, the location of the machine or position of the yarder shall be such that the operator will not be endangered by incoming logs or debris.

(4) Logging machines and their components shall be securely anchored to their bases.

(5) A safe and adequate means of access and egress to all parts of logging machinery where persons must go shall be provided and maintained in a safe condition.

(6) Any logging equipment having a single cab entrance door, shall be equipped with an alternate means of escape from the cab should the door be blocked in the event of vehicle rollover or fire. Door latches shall be operable from both sides.

(7) Logging machines shall be kept free of flammable waste materials and any materials which might contribute to slipping, tripping or falling.

(8) Logging machine engines shall be stopped during inspection or repairing, except where operation is required for adjustment.

(9) Grab rails shall be provided and maintained in good repair on all walkways of stationary units elevated more than four feet. Walkway surfaces on such units shall be of the slip-proof type.

(10) Standard safeguards shall be provided at every place on a machine where persons may be exposed to contact with revolving parts or pinchpoints during normal operations.

(11) To protect workers from exposure to the hazardous pinchpoint area between the rotating superstructure and the nonrotating undercarriage of any logging machine, signs shall be conspicuously posted on all sides of that type machine warning workers: "DANGER - STAY CLEAR."

(12) Items of personal property, tools or other miscellaneous materials shall not be stored on or near any logging machine if retrieval of such items would expose a worker to the hazardous pinchpoint referred to in subsection (11) of this section.

(13) Workers shall approach the hazardous pinchpoint area referenced in subsection (11) of this section, only after informing the operator of their intent and receiving acknowledgment from the operator that he understands their intention. All such machines shall be stopped while any worker is in the hazardous pinchpoint area.

(14) A minimum distance of thirty-six inch clearance shall be maintained between the counterweight of a loading machine and trees, logs, banks, trucks, etc., while the machine is in operation. If this clearance cannot be maintained, suitable barricades with warning signs attached, similar to a standard guardrail, shall be installed to isolate the hazardous area. "DANGER—36 inch clearance" shall be marked in contrasting colors on sides and face of counterweight on shovels, loaders and other swing-type logging equipment. This requirement shall not apply when:

(a) The distance from the highest point of the undercarriage to the lowest point of the rotating superstructure is greater than 18-inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage;

(b) The distance from the ground to the lowest point of the rotating superstructure is greater than five feet six inches. This applies only to that portion of the rotating superstructure that swings directly over the undercarriage; or

(c) On crawler-type track-mounted logging machines only, the rotating superstructure is positioned at a right angle to the tracks, and the distance from the side of the cab to the extreme end of the track is four feet or less. This exemption shall apply to side barricades only; barricades between the tracks at both ends of any crawler-type logging machine are required regardless of the right angle dimension.

(15) Logging machines shall not be operated until all guards have been installed, safety devices activated and maintenance equipment removed.

(16) Stationary logging machines shall be securely anchored to prevent movement of the machine while yarding or skidding.

(17) Ends of drum lines shall be securely fastened to the drum and at least three wraps shall be maintained on the drum at all times. (This rule does not apply to tractor winch lines.)

(18) Such units shall not be tied to any part of the towing unit, when they are being moved on truck and trailer units.

(19) Logs shall not be moved, swung or held over any persons.

(20) Brow logs in the loading or unloading area shall be blocked or secured to prevent movement. Log decks shall be maintained in a safe condition and shall not present a hazard of logs rolling or sliding on workers.

(21) Brakes shall be set and brake locking devices engaged on logging machines when the operator leaves his normal operating position.

(22) Guyline drum controls and outrigger controls shall be separated, color coded or marked in a manner that will prevent engaging of the wrong control.

(23) Exhaust pipes shall be located or insulated to protect workers from accidental contact with the pipes or muffler and shall direct exhaust gases away from the operator and other persons.

(24) Glass on logging machines shall be safety glass or equivalent and shall be free of deposits of oil, mud, or defects that could endanger the operator or other persons.

(25) Broken or defective glass shall be removed and replaced.

(26) Where safety glass or equivalent, does not provide adequate operator protection from flying chokers, chunks, saplings, limbs, etc., an additional metal screen and/or barrier shall be provided over the safety glass. The operator's vision shall not be impaired. Barriers shall consist of 1/4-inch diameter woven wire material with maximum two inch openings, 3/4-inch diameter steel rod with eight inch maximum openings in any direction or barriers so designed and constructed to provide equivalent operator protection. Such barriers shall be installed no closer than four inches to the glass to enable keeping the glass clean.

(27) Except for hydraulic drums, brakes shall be installed on all logging machines and maintained in effective working condition. Brake levers shall be provided with a ratchet or other effective means for securely holding drums. Brakes shall be tested prior to putting the machine in operation. If defective, they shall be repaired immediately.

(28) A stable base shall be provided under outriggers or leveling pads and a means shall be provided to hold outriggers in both the retracted and extended position.

(29) Abrasive contact with hydraulic hose, tubing or fittings shall be eliminated before further use and defective hydraulic hoses, lines and fittings shall be replaced.

(30) When moving logging machines, the driver or operator shall have a clear and unobstructed view of the direction of travel. When this is not possible, a signalperson with a clear and unobstructed view of the direction of travel shall be designated and used to direct movement of the machine.

(31) Where a signalperson is used, the equipment operator shall move the equipment only on signal from the designated signalperson and only when the signal is distinct and clearly understood.

(32) When moving power units, persons other than the operator and the person in charge shall not be permitted to ride thereon.

(33) All obstructions which may reach the operator while moving machines, shall be removed.

(34) Only shackles with threaded pins shall be used for connecting moving rigging.

(35) Anchors used for moving power units shall be carefully chosen and must be stable.

(36) When snubbing a machine down a steep slope, use the mainline for snubbing and pull with the haulback whenever possible.

(37) Self-powered mobile logging machines of the type where towers or spars can be raised, shall not travel on steep road grades unless they are securely snubbed or towed.

(38) When moving, all persons working on the landing shall stay in the clear of the machine and shall inform the operator of their intention to approach or be near the machine.

(39) Service brakes shall be provided on crawler crane–type logging machines that will bring the machine to a complete stop from normal travel speeds.

(40) A traction lock or brake or an equivalent locking and braking system shall be provided on crawler crane–type machines that is capable of holding the machine stationary under normal working conditions, and on any grade the machine is capable of negotiating.

(41) No modifications or additions which affect the capacity or safe operation of the equipment shall be made by the employer without written approval of the manufacturer or a qualified engineer. If such modifications or changes are made, the capacity, operation and maintenance instruction plates, tags, or decals, shall be changed accordingly. In no case shall the original safety factor of the equipment be reduced.

(42) Equipment shall be classed and used according to the manufacturer's rating. Where low gear ratios or other devices are installed to increase the line pull in accordance with subsection (42) of this section, the size of the rigging shall be increased accordingly so that it will safely withstand the increased strains.

(43) Every tractor, skidder, front–end loader, scraper, grader and dozer shall be equipped with a roll–over protective structure (R.O.P.S.). Such structures shall be installed, tested and maintained in accordance with:

(a) WAC 296–155–950 through 296–155–965 of the safety standards for construction, if manufactured prior to the effective date of this chapter.

(b) The society of automotive engineers SAE 1040a–1975, "performance criteria for roll–over protective structures (ROPS) for earthmoving, construction, logging and industrial vehicles," if manufactured after the effective date of this chapter.

(44) The ROPS shall be of sufficient height and width so that it will not impair the movements of the operator or prevent his immediate escape from the vehicle in emergencies and shall allow as much visibility as possible. Clearance above the deck and the ROPS of the vehicle at points of egress shall not be less than fifty–two inches.

(45) Certified roll–over protective systems shall be identified by a metal tag permanently attached to the ROPS in a position where it may be easily read from the ground. The tag shall be permanently and clearly stamped, etched or embossed indicating the name and address of the certifying manufacturer or registered professional engineer, the ROPS model number (if any) and the vehicle make, model or serial number the ROPS is designed to fit.

(46) Roll–over protective structure systems shall be maintained in a manner that will preserve their original strength. Welding shall be performed by qualified welders only. (A qualified welder is defined under "welder qualification" in American Welding Society A.W.S. A3.0–69.)

(47) Every tractor, skidder, front–end loader, log stacker, forklift truck, scraper, grader and dozer shall be equipped with a FOPS. Such structures shall be installed, tested and maintained in accordance with the society of automotive engineers SAE J231–1971, "minimum performance criteria for falling object protective structures (F.O.P.S.)."

(48) Vehicles equipped with ROPS or FOPS as required in subsections (43) and (47) of this section, shall comply with the society of automotive engineers SAE J397a–1972, "deflection limiting volume for laboratory evaluation of roll–over protective structures (ROPS) and falling object protective structures (FOPS) of construction and industrial vehicles."

(49) The opening in the rear of the ROPS on the crawler or rubber–tired tractors (skidders) shall be covered with 1/4–inch diameter woven wire having not less than 1–1/2–inches or more than 2–inch mesh, or material which will afford equivalent protection for the operator. The covering shall be affixed to the structural members so that ample clearance is provided between the screen and the back of the operator. Structural members shall be free from projections which would tend to puncture or tear flesh or clothing. Suitable safeguards or barricades shall be installed, in addition to the screen, to protect the operator when there is a possibility of being struck by any material that could enter from the rear.

(50) Crawler and rubber–tired tractors (skidders) working in areas where limbs or brush may endanger the operator shall be guarded. Shear or deflector guards shall be installed on each side of the vehicle at an angle leading forward and down from the top front edge of the canopy of the vehicle, which will tend to slide the brush or limbs up and over the top of the canopy. Open mesh material with openings of a size that will reject the entrance of an object larger than 1–3/4–inches in diameter, shall be extended forward as far as possible from the rear corners of the cab sides to give the maximum protection against obstacles, branches, etc. entering the cab area. Deflectors shall also be installed ahead of the operator to deflect whipping saplings and branches. These shall be located so as not to impede ingress or egress from the compartment area. The floor and lower portion of the cab shall be completely enclosed with solid material, except at entrances, to prevent the operator from being injured by obstacles which otherwise could enter the cab compartment.

(51) Enclosures for agricultural and industrial tractors manufactured after September 1, 1972, shall be constructed, designed and installed as detailed in the society of automotive engineers technical report J168.

(52) (a) All bidirectional machines, such as rollers, compactors, front–end loaders, log stackers, log loaders, bulldozers, shovels, and similar equipment, shall be equipped with a horn distinguishable from the surrounding noise level, which shall be operated as needed when the machine is moving in either direction. The horn shall be maintained in an operative condition.

(b) No employer shall permit earthmoving, compacting, or yarding equipment, which has an obstructed view to the rear, to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-551, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-551, filed 9/21/79.]

WAC 296-54-553 Yarding, loading and skidding machines--Mobile towers and boom-type yarding and loading machines. (1) Portable (mobile) tower specification plate. A specification plate shall be permanently attached to the base of each portable (mobile) tower so it can be easily read by a person standing on the ground or on the base platform. It shall contain the following information:

(a) Name and address of manufacturer and model number;

(b) The maximum diameter of the mainline or skyline for which the unit is designed and size of haulback and mainline to be used together if drums are interlocking or automatic tensioning type;

(c) The number and size of guylines required to stabilize the unit;

(d) The maximum length and capacity of a loading boom or similar equipment which may be attached if the structure is engineered for such;

(e) If the unit is designed for use on any skyline system of logging; and

(f) Maximum degree of inclination from vertical at which the spar (tower) may be used.

(2) The critical parts of portable spars (towers) shall be inspected by a qualified person at reasonable intervals while in service and each time the spar (tower) is lowered. If indication of failure or weakness is noted or suspected, the part shall be inspected by an approved method and found to be safe, or it shall be repaired or replaced before the operation is allowed to proceed.

(3) Blocks and fair leads shall be so located that there will be no chafing or sawing of any line or part of the structure.

(4)(a) Power guylines used for stabilizing any unit may be choked around an adequately notched stump if using a shackle or approved choker attachment. Three full wraps or more must be placed around an adequately notched stump to secure the guyline if clamps are used. Guyline extensions shall be property shackled to the guylines.

(b) When using a deadman anchor to support a guyline, the connection shall be made by properly shackling both eyes of the anchor strap to the guyline.

(c) If guylines on metal spars or towers are not power guylines, they shall be secured to stumps or anchorages in the same manner as guylines on wood spar trees.

(5) Power driven devices shall be securely anchored when used to tighten guylines. Holding of such devices manually is prohibited.

(6)(a) Machines or equipment shall be stabilized by their design or the attachment of guylines or other devices which will prevent the machine from overturning. Machine operators shall be advised of the stability limitations of the equipment.

(b) If stabilization of a machine is dependent upon the use of hydraulic outriggers, a pilot operated hydraulic check valve or other locking device shall be installed to prohibit the outrigger from retracting in case a hydraulic line breaks, except when proper blocking is provided.

(7) A qualified person shall direct each raising or lowering of a portable spar or tower.

(8) All persons not engaged in the actual raising or lowering of portable spars or towers shall stay in the clear during such operations.

(9) Guylines required in rigging spars or towers shall be evenly spooled to prevent fouling.

(10) Portable spars or towers shall be leveled to provide even line spooling and avoid excessive stress on component parts.

(11) The portable spar or tower shall be lowered or supported so the stability of the machine is not impaired during movement of the portable spar or tower.

(12) Guylines of portable spars or towers shall not be anchored to standing trees if the unit is used for yarding as a head tree.

(13) Timbers used for masts or booms shall be straight-grained, solid, and capable of withstanding the working load.

(14) Boom points of timber booms shall be equipped with metal straps, plates, or other devices as needed to properly secure eyebolts and fittings used to support lines, blocks, or other rigging.

(15) All mobile vehicles on which yarding equipment, towers, spars, masts or booms are installed, shall be maintained in a safe operating condition.

(16) A-frames shall be secured against displacement and the tops shall be securely bolted or lashed to prevent displacement.

(17) When any portable-type tower, A-frame or spar is used, the base shall be securely and solidly supported.

(18) All loading, unloading and skidding machines shall be equipped with a horn or whistle which is audible above the surrounding noise level. Such horn or whistle shall be maintained in an operative condition.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-553, filed 9/21/79.]

WAC 296-54-555 Yarding--General requirements. (1) Workers shall be alert and be positioned in the clear where they will not be exposed to the hazards of moving logs, saplings, root wads, chunks, rigging, or any other material which might be put in motion by the rigging or turn, before the "go ahead" signal is given. They shall remain in the clear at all times while the rigging is moving.

(2) No person shall be near rigging which is stopped at a hangup, until the rigging has been slacked to reduce the hazard.

(3) No person shall stand or remain within the bight of any running line, nor in a position where he could be struck by a line were it to break or come loose.

(4) Whenever possible, chokers shall be set from the uphill side of a log. Persons shall not be on the lower side of a log which appears to be unstable or likely to roll.

(5) Wire rope used for chokers shall not exceed seventy-five percent of the breaking strength of the mainline.

(6) Chokers shall be placed near the end of the log whenever possible.

(7) When pulling lines, do not stand close to fair leads or blocks.

(8) Lines shall not be guided on drums with hands or feet. The use of a bar or equivalent means is recommended.

(9) Yarding with more than one unit on any one head spar is prohibited.

(10) The angle between the power unit, the high lead block, and the mainline road shall not exceed a square lead on rigged spars. When using portable spars or towers, the location of the machine or position of the operator shall be such that the operator shall not be endangered by incoming logs.

(11) When there is danger of tail block straps slipping up or off the stump or tree, the stump or tree shall be adequately notched or the line properly wrapped and secured. When the tail tree or stump is not secure, it shall be tied back.

(12) When yarding is being done during the hours of darkness, the area shall be provided with illumination which will allow persons to safely perform their duties. The source of illumination shall be located and directed creating a minimum of shadows and glare. If using a portable tail–hold, lights shall be directed on the equipment to allow the person to visually ascertain that the tail–hold equipment remains stabilized.

(13) No person shall be required or allowed to ride on a turn of logs or rigging excepting the passline. The practice of holding on to moving rigging or chokers to assist a person by being pulled uphill shall be prohibited.

(14) Wire rope shall be wound evenly on the drum and not be allowed to lap one layer on another in an irregular manner. Sheaves shall be smooth and free from defects that could cause rope damage.

(15) Chaser shall be sure that turns are safely landed before approaching to remove the chokers.

(16) Signaling machine operator at landings by throwing bark, chips or other material in the air is prohibited. Whistle or hand signals shall be used at all times.

(17) Logs shall not be landed while loaders or chasers are working in the chutes. Logs shall not be removed from yarder tree by the loader or tractors while the chaser is unhooking a turn from the yarder.

(18) Landings shall be as level as possible and of sufficient size to safely accommodate the majority of type turns to be yarded. At least two–thirds of the log shall rest on the ground or other substantial material when landed. Logs shall be set on the ground or deck and not dropped when being landed. Long sticks shall be safely removed before additional logs are landed.

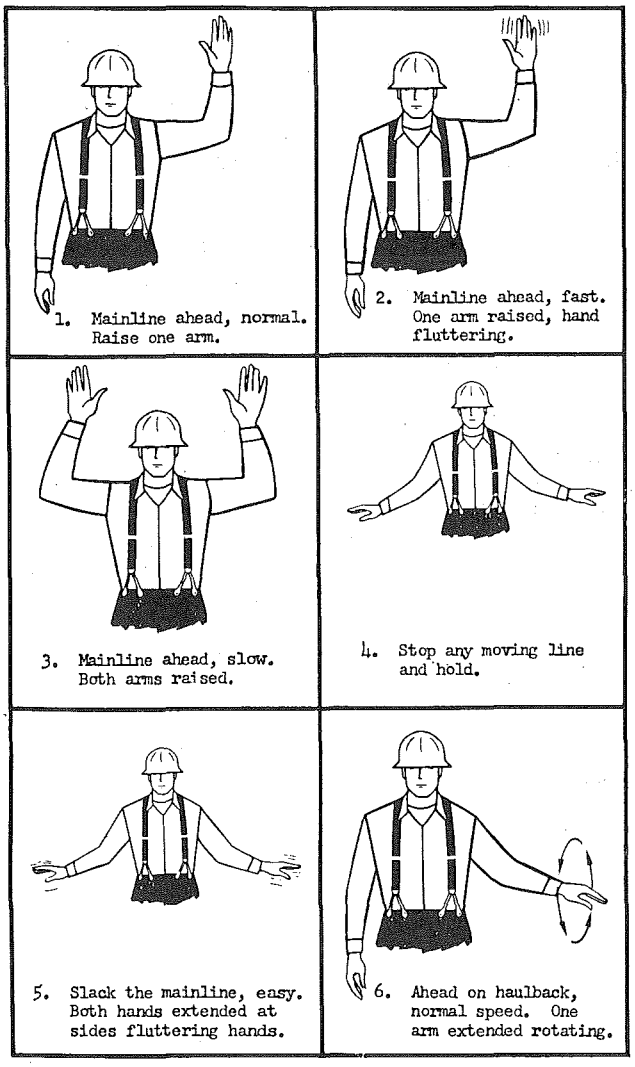
(19) Chokers shall not be used on a grapple system when the yarder operator cannot clearly see the persons setting the choker, unless conventional whistle signals are used.

(20) Landings shall be free of root wads, limbs, tops, etc., that constitute a safety hazard.

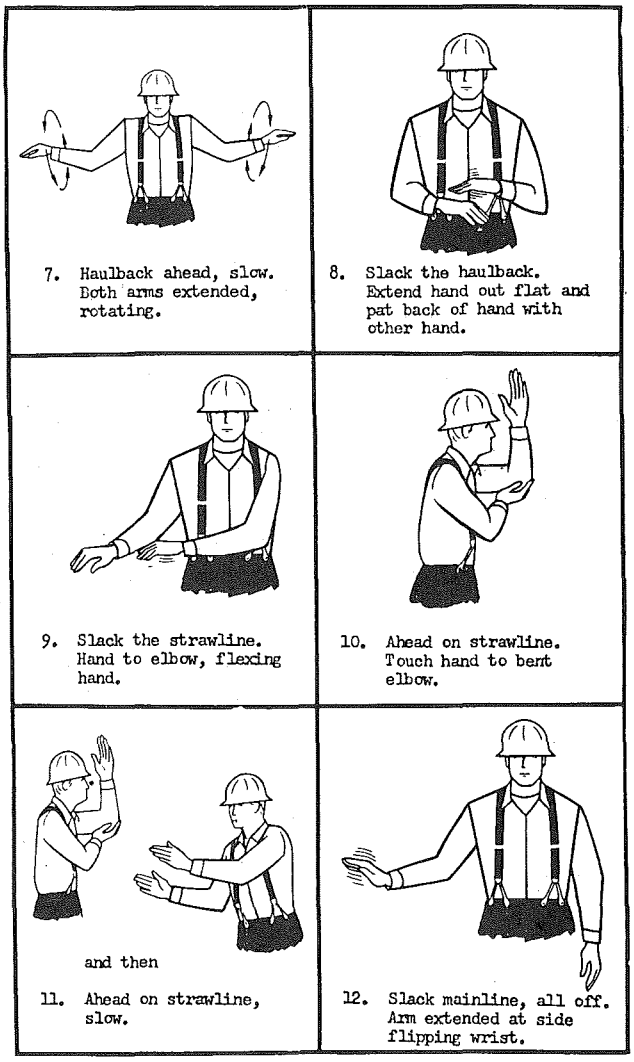
(21) When shorter logs are yarded in the same turn with long sticks, the shorter logs shall be landed and chokers released before the long stick choker is released.

Note: See Figures No. 4–A and 4–B for Standard Hand Signals for High Lead Logging.

STANDARD HAND SIGNALS FOR HIGH LEAD LOGGING



STANDARD HAND SIGNALS FOR HIGH LEAD LOGGING



[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-555, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-555, filed 9/21/79.]

WAC 296-54-557 Yarding--Tractors and skidders. (1) Operators shall ensure that all persons are safely in the clear before initiating or continuing the movement of any mobile equipment.

(2) No person shall ride on any mobile equipment, except where adequate and protected seats, or other safe facilities have been provided.

(3) While in use, tractors and skidders shall be maintained in a safe operable condition, with all guards in proper places.

(4) No person shall be under a tractor or other mobile equipment, or be placed in a hazardous position around the equipment without first making certain it cannot move or be moved by another person.

(5) Prior to working on tractor or skidder blades, arches, or other equipment, the equipment must be blocked up lowered to the ground or otherwise secured against slipping or falling. Prior to working on hydraulic equipment, the pressure shall be relieved.

(6) When making repairs to tractor or skidder equipment, such as blades, arches, etc., the engine shall be stopped. The engine may be run when necessary for making adjustments to the engine or equipment.

(7) Operators shall operate and control their machines in a safe manner and avoid operations in areas where machine stability may not be maintained.

(8) The following safe work procedures shall be adhered to:

(a) When hobo logs are picked up with a log turn, the turn shall be dropped to free the hobo.

(b) No line shall be allowed to trail behind the tractor or skidder where it may hang up and snap forward.

(c) Winching at a severe angle, which could cause a hang-up to upset the machine, shall be avoided.

(d) Grapple skidded log turns shall be evenly bunched with squared butt ends, securely grappled and safely positioned before travel commences.

(e) Before climbing or descending grades, the proper gear shall be selected to allow the engine to govern the tractor speed.

(f) On side hills, an abrupt turn uphill shall be avoided. The tractor or skidder shall be backed downhill first then turned uphill. The turn may be slacked off as necessary to permit this maneuver.

(g) The operator shall, before leaving a tractor or skidder, lower the blade to the ground and apply the parking brake.

(h) Tractor or skidder speed shall be adjusted to the circumstances prevailing. Excessive or uncontrolled speed shall be avoided.

(i) Winch lines on logging tractors or skidders shall be attached to the drum with a break–away device.

(9) When hand signals are required for giving instructions to the tractor or skidder operator, the signals as illustrated in Figure No. 5 shall be used.

(10) Tractor and skidder brakes shall stop and hold the machine on any grade over which the machine is being operated. They shall be effective whether or not the engine is running and regardless of the direction of travel.

(11) Tractors and skidders shall be provided with a brake locking device that will hold the machine indefinitely on any grade on which it is being operated.

(12) Operating a tractor or skidder with defective steering or braking devices is prohibited.

(13) Arches shall be equipped with line guards.

(14) Where tractor and skidder operators or helpers, because of the nature or their work duties, are required to wear calk soled footwear, the decks and operating foot controls shall be covered with a suitable nonslip material.

(15) Glass used in windshields or in cabs shall be of "safety glass." Broken or cracked glass shall be replaced as soon as practical. Barriers shall provided, as needed, to protect the glass from being broken by using screen, bars or other material. The protective material shall be a type that will not create a hazard by undue impairment of the operators' vision.

(16) Barriers shall be constructed of at least 1/4–inch diameter woven wire with two inch maximum openings or other material providing equivalent protection. The barrier shall be installed at least four inches from the glass to provide space to clean the glass.

(17) Enclosed–type cabs installed on mobile equipment shall have two means of exit. One may be deemed as an emergency exit and be available for use at all times, regardless of the position of the side arms or other movable parts of the machine. (An easily removable window will be acceptable as the emergency exit if it is of adequate size for a person to readily exit through.)

(18) Seat belts shall be installed on tractors and other mobile equipment equipped with a roll–over protective system and shall be worn by the operator and passenger(s) at all times the vehicle is in motion. The seat belts and assemblies shall be designed, constructed and maintained to conform to the requirements specified in the society of automotive engineers technical report J386 or J333a. Seat belts need not be provided for equipment which is designed for stand–up operations.

(19) If the equipment operator and person in charge of the jobsite agree that life safety of the operator is jeopardized by wearing a seat belt, the seat belt need not be worn.

(20) Seat belts required by subsection (18) of this section, shall have buckles of the quick release type, designed to minimize the possibility of accidental release.

(21) Before a tractor or skidder is started or moved, the operator shall be certain nothing is in the way that could be set in motion by the movement of the machine thereby endangering persons.

(22) A log or turn shall not be moved until all persons are in the clear (behind the turn and on the uphill side on sloping ground).

(23) Before the engine is shut–down, the brake locks shall be applied and all elements such as blades, buckets, grapples and shears shall be lowered to the ground.

(24) Tractors or skidders shall not be operated within a radius of two tree heights of trees being felled unless called upon by the cutter or faller to ground lodged trees. All cutters shall be notified of the tractor or skidder entrance into the area and all felling within two tree lengths of the tractor or skidder shall be stopped.

(25) Except where electrical distribution and transmission lines have been de–energized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines, equipment or machines shall be operated proximate to power lines only in accordance with the following:

(a) For lines rated 50 kV or below, minimum clearance between the lines and any part of the equipment or machine shall be ten feet;

(b) For lines rated over 50 kV, minimum clearance between the lines and any part of the equipment or machine shall be ten feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than ten feet;

(c) In transit with no load and boom or extended equipment lowered, the equipment clearance shall be a minimum of four feet for voltages less than 50 kV, and ten feet for voltages over 50 kV up to and including 345 kV, and sixteen feet for voltages up to and including 750 kV;

(d) A person shall be designated to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;

(e) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate it is not an energized line and it has been visibly grounded.

(26) Log piles and decks shall be located and constructed to provide working areas around them that will accommodate the safe movement of personnel and machinery.

(27) Braking systems required by subsection (10) of this section, shall be capable of stopping the equipment

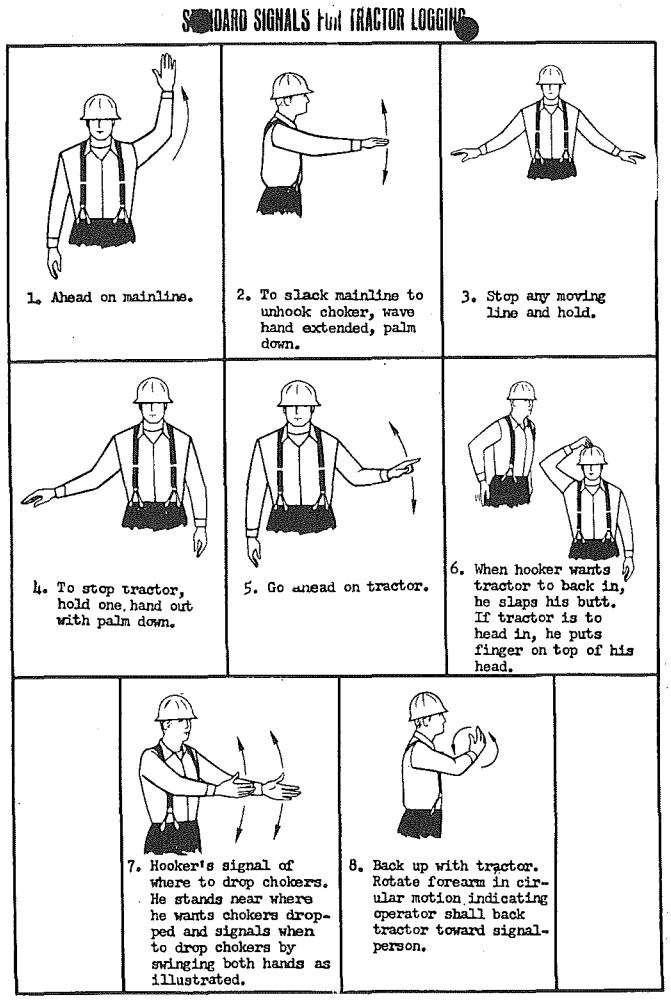
fully loaded as specified in the society of automotive engineers technical reports listed in subdivisions (a), (b), (c) or (d) of this subsection and shall be installed by June 30, 1973. All rubber-tired tractors or other types of mobile equipment listed below, manufactured after the effective date of these standards, shall have braking systems and requirements specified in the applicable technical reports of the society of automotive engineers as follows:

(a) Brake systems for off-highway, rubber-tired, self-propelled scrapers shall meet or exceed the requirements outlined in SAE technical report J319b.

(b) Brake systems for off-highway, rubber-tired, front-end loaders, log stackers and dozers (skidders) shall meet or exceed the requirements outlined in SAE technical report J237.

(c) Brake systems for rubber-tired, self-propelled graders shall meet or exceed the requirements outlined in SAE technical report J236.

(d) Brake systems for off-highway trucks and wagons shall meet or exceed the requirements outlined in SAE technical report J166.



[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-557, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-557, filed 9/21/79.]

WAC 296-54-559 Yarding--Helicopters and helicopter cranes. (1) Helicopters and helicopter cranes shall comply with any applicable regulations of the Federal Aviation Administration.

(2) Prior to each day's operation, a briefing shall be conducted. This briefing shall set forth the plan of operation for the pilot and ground personnel.

(3) A take-off path from the log pickup point shall be established, and shall be made known to all workers in that area before the first turn of logs is moved.

(4) The helicopter flight path to and from the drop zone shall be designated and no equipment or personnel (other than flight personnel necessary to assist landing and take-off) will occupy these areas during helicopter arrival or departure.

(5) The approach to the landing shall be clear and long enough to prevent tree tops from being pulled into the landing.

(6) The helicopter shall not pass over an area in which cutters are working at a height which would cause the rotor wash to inhibit a cutter's ability to safely control a tree or dislodge limbs.

(7) Drop zones shall be twice the nominal length of logs to be landed.

(8) The drop zone shall be no less than one hundred twenty-five feet from the loading or decking area.

(9) Separate areas shall be designated for landing logs and fueling the helicopter(s).

(10) The yarding helicopter shall be equipped with a siren to warn workers of any hazardous situation.

(11) Workers shall remain in the clear as chokers are being delivered, and under no circumstances will workers move under the helicopter that is delivering the chokers or take hold of the chokers before they have been released by the helicopter.

(12) Log pickup shall be arranged in a manner that the hook up crew will not work on slopes below felled and bucked timber.

(13) If the load must be lightened, the hook shall be placed on the ground on the uphill side of the turn before the hooker approaches to release the excess logs.

(14) Landing crew shall be in the clear before logs are dropped.

(15) One end of all the logs in the turn shall be touching the ground and lowered to an angle of not more than 45° from the horizontal before the chokers are released.

(16) Logs shall be laid on the ground and the helicopter will be completely free of the choker(s) before workers approach the logs.

(17) If the load will not release from the hook, the load and the hook shall be on the ground before workers approach to release the hook manually.

(18) Loads shall be properly slung. Tag lines shall be of a length that will not permit their being drawn up into rotors. Pressed sleeve, swedged eyes, or equivalent means shall be used for all freely suspended loads to prevent hand splices from spinning open or cable clamps from loosening.

(19) All electrically operated cargo hooks shall have the electrical activating device so designed and installed

as to prevent inadvertent operation. In addition, these cargo hooks shall be equipped with an emergency mechanical control for releasing the load. The hooks shall be tested prior to each day's operation to determine that the release functions properly, both electrically and mechanically.

(20)(a) Personal protective equipment for employees receiving the load shall consist of complete eye protection and hard hats secured by chinstraps, and high visibility vests or outer garments.

(b) Loose–fitting clothing likely to flap in the downwash, and thus be snagged on hoist line, shall not be worn.

(21) Every practical precaution shall be taken to provide for the protection of employees from flying objects in the rotor downwash. All loose gear within one hundred feet of the place of lifting of the load, depositing the load, and all other areas susceptible to rotor downwash shall be secured or removed.

(22) Good housekeeping shall be maintained in all helicopter loading and unloading areas.

(23) The helicopter operator shall be responsible for size, weight, and manner in which loads are connected to the helicopter. If, for any reason, the helicopter operator believes the lift cannot be made safely, the lift shall not be made.

(24) Employees shall not perform work under hovering craft except for that limited period of time necessary to guide, secure, hook and unhook loads. Regardless of whether the hooking or unhooking of a load takes place on the ground or other location in an elevated work position in structural members, a safe means of access and egress, to include an unprogrammed emergency escape route or routes, shall be provided for the employees hooking or unhooking loads.

(25) Static charge on the suspended load shall be dissipated with a grounding device before ground personnel touch the suspended load, or protective rubber gloves shall be worn by all ground personnel touching the suspended load.

(26) The weight of an external load shall not exceed the manufacturer's rating.

(27) Hoist wires or other gear, except for pulling lines or conductors that are allowed to "pay out" from a container or roll off a reel, shall not be attached to any fixed ground structure, or allowed to foul on any fixed structure.

(28) When visibility is reduced by dust or other conditions, ground personnel shall exercise special caution to keep clear of main and stabilizing rotors. Precautions shall also be taken by the employer to eliminate as far as practical reduced visibility.

(29) Signal systems between aircrew and ground personnel shall be understood and checked in advance of hoisting the load. This applies to either radio or hand signal systems. Hand signals shall be as shown in Figure 6.

(30) No unauthorized person shall be allowed to approach within fifty feet of the helicopter when the rotor blades are turning.

(31) Whenever approaching or leaving a helicopter with blades rotating, all employees shall remain in full view of the pilot and keep in a crouched position. Employees shall avoid the area from the cockpit or cabin rearward unless authorized by the helicopter operator to work there.

(32) Sufficient ground personnel shall be provided, when required, for safe helicopter loading and unloading operations.

(33) There shall be constant reliable communication between the pilot, and a designated employee of the ground crew who acts as a signalperson during the period of loading and unloading. This signalperson shall be distinctly recognizable from other ground personnel.

(34) Open fires shall not be permitted in an area that could result in such fires being spread by the rotor downwash.

(35) Under no circumstances shall the refueling of any type helicopter with either aviation gasoline or Jet B (Turbine) type fuel be permitted while the engines are running.

(36) Helicopters using Jet A (Turbine–Kerosene) type fuel may be refueled with engines running provided the following criteria is met:

(a) No unauthorized persons shall be allowed within fifty feet of the refueling operation or fueling equipment.

(b) A minimum of one thirty–pound fire extinguisher, or a combination of same, good for class A, B and C fires, shall be provided within one hundred feet on the upwind side of the refueling operation.

(c) All fueling personnel shall be thoroughly trained in the refueling operation and in the use of the available fire extinguishing equipment they may be expected to utilize.

(d) There shall be no smoking, open flames, exposed flame heaters, flare pots or open flame lights within fifty feet of the refueling area or fueling equipment. All entrances to the refueling area shall be posted with "NO SMOKING" signs.

(e) Due to the numerous causes of static electricity, it shall be considered present at all times. Prior to starting refueling operations, the fueling equipment and the helicopter shall be grounded and the fueling nozzle shall be electrically bonded to the helicopter. The use of conductive hose shall not be accepted to accomplish this bonding. All grounding and bonding connections shall be electrically and mechanically firm, to clean unpainted metal parts.

(f) To control spills, fuel shall be pumped either by hand or power. Pouring or gravity flow shall not be permitted. Selfclosing nozzles or deadman controls shall be used and shall not be blocked open. Nozzles shall not be dragged along the ground.

(g) In case of a spill, the fueling operation shall be immediately stopped until such time as the person–in–charge determines that it is safe to resume the refueling operation.

(h) When ambient temperatures have been in the 100 degree F. range for an extended period of time, all refueling of helicopters with the engines running shall be

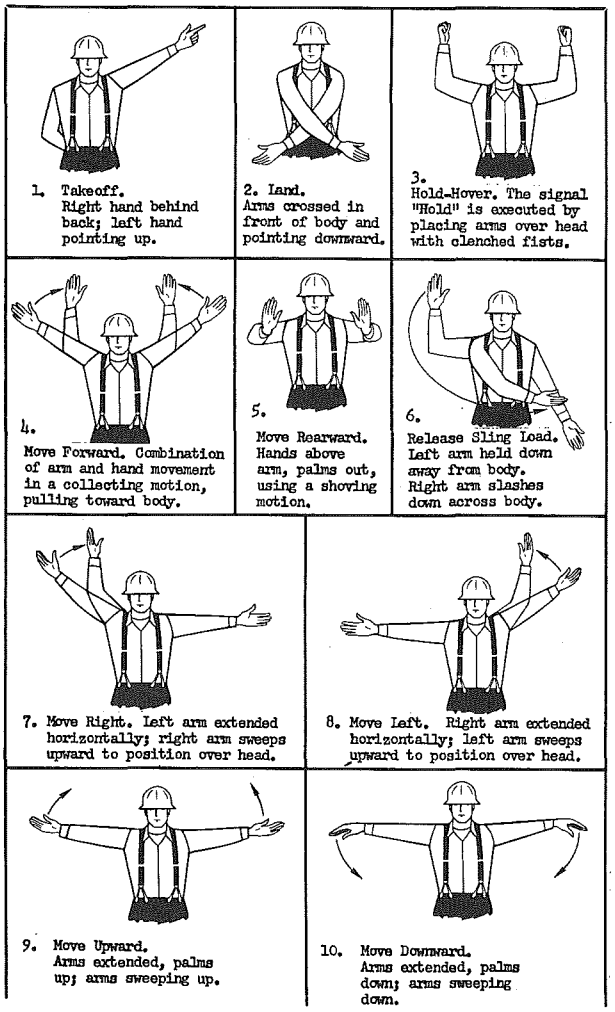
suspended until such time as conditions become suitable to resume refueling with the engines running.

(37) Helicopters with their engines stopped being refueled with aviation gasoline or Jet B (Turbine) type fuel, shall also comply with subsection (36)(a) through (g) of this section.

(38) Hook on persons in logging operations shall wear contrasting colored hard hats, with chinstraps, and high visibility vests or outer garments to enable the helicopter operator to readily identify their location.

(39) Riding the load or hook of a helicopter is prohibited except in the case of an emergency with the proper safety gear.

HELICOPTER HAND SIGNALS



Note: See Figures No. 7-A through 7-P, for illustrations of various types of cable logging systems.

See Figures No. 7-Q through 7-U, for illustrations of whistle signals used on various cable logging systems.

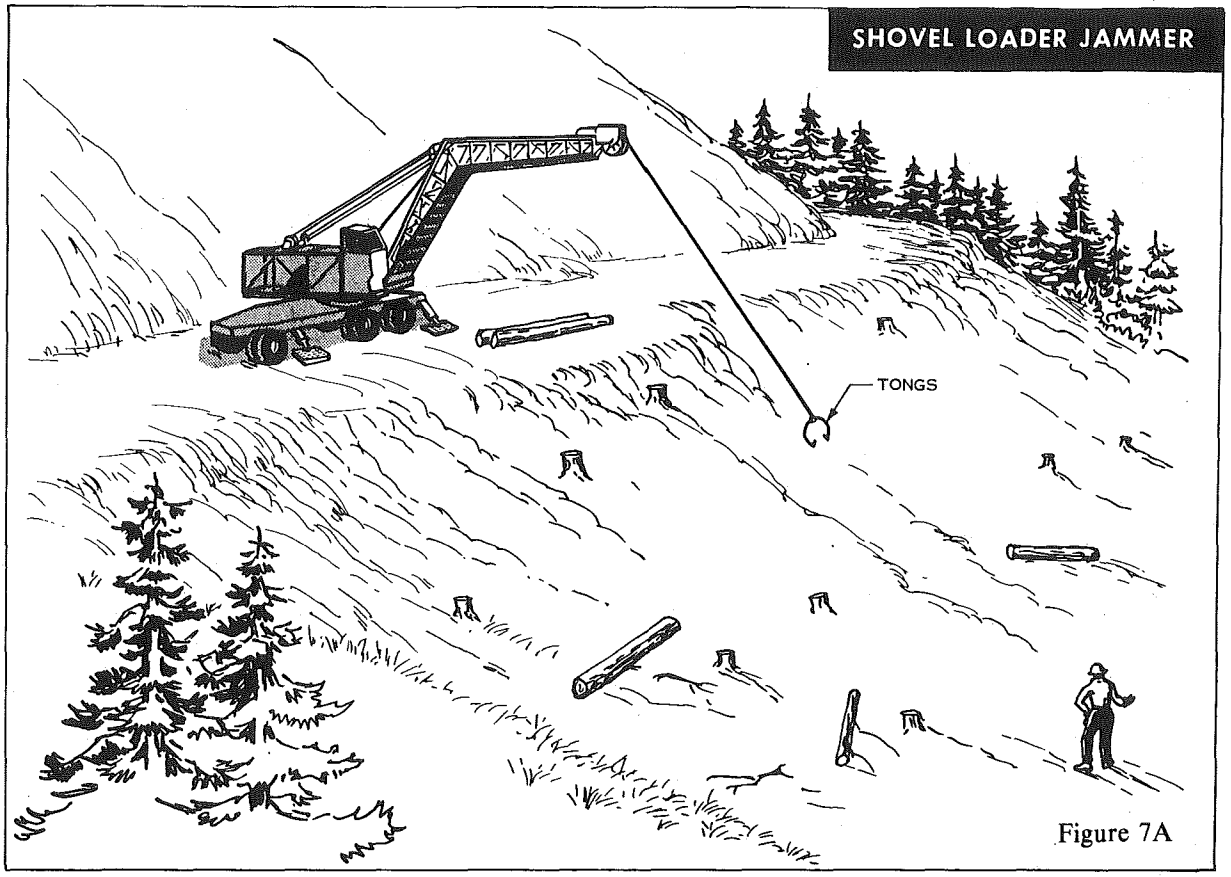


Figure 7A

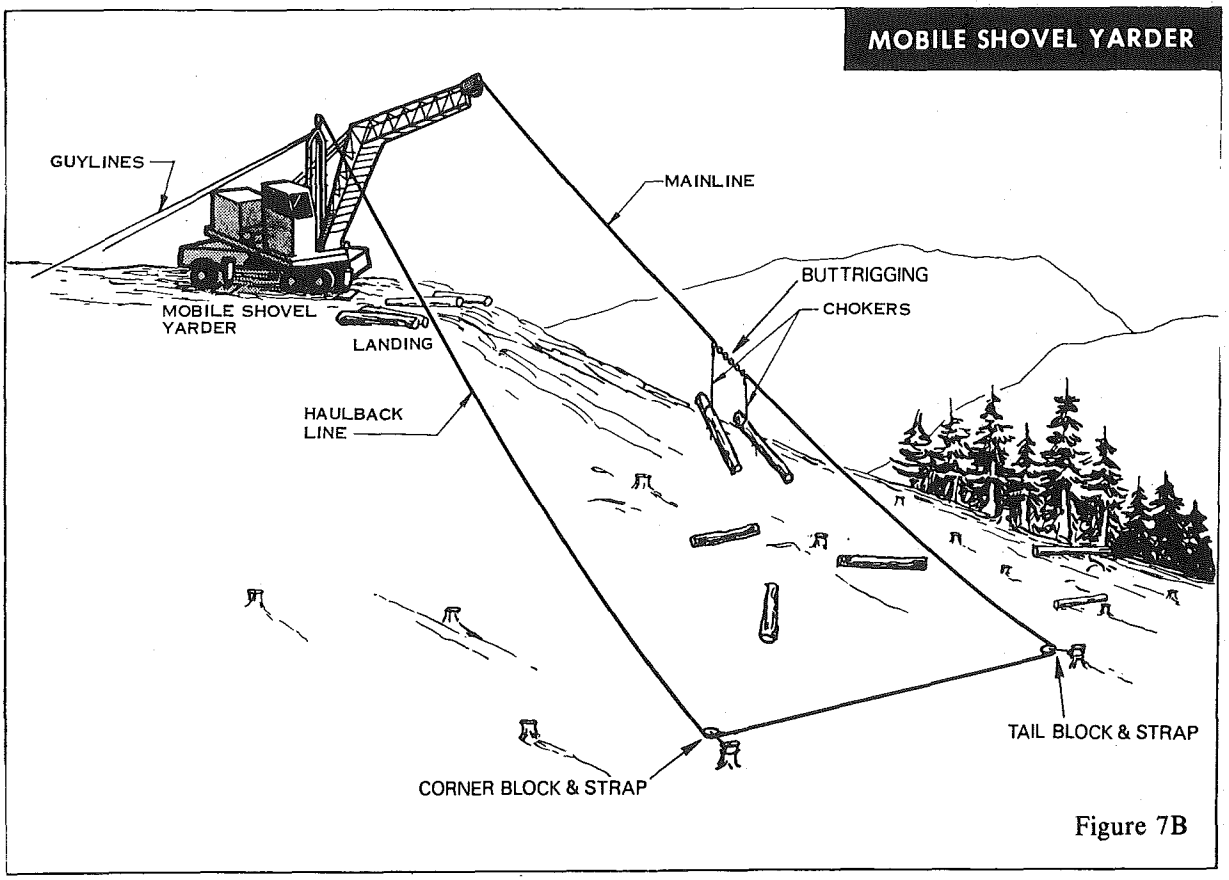


Figure 7B

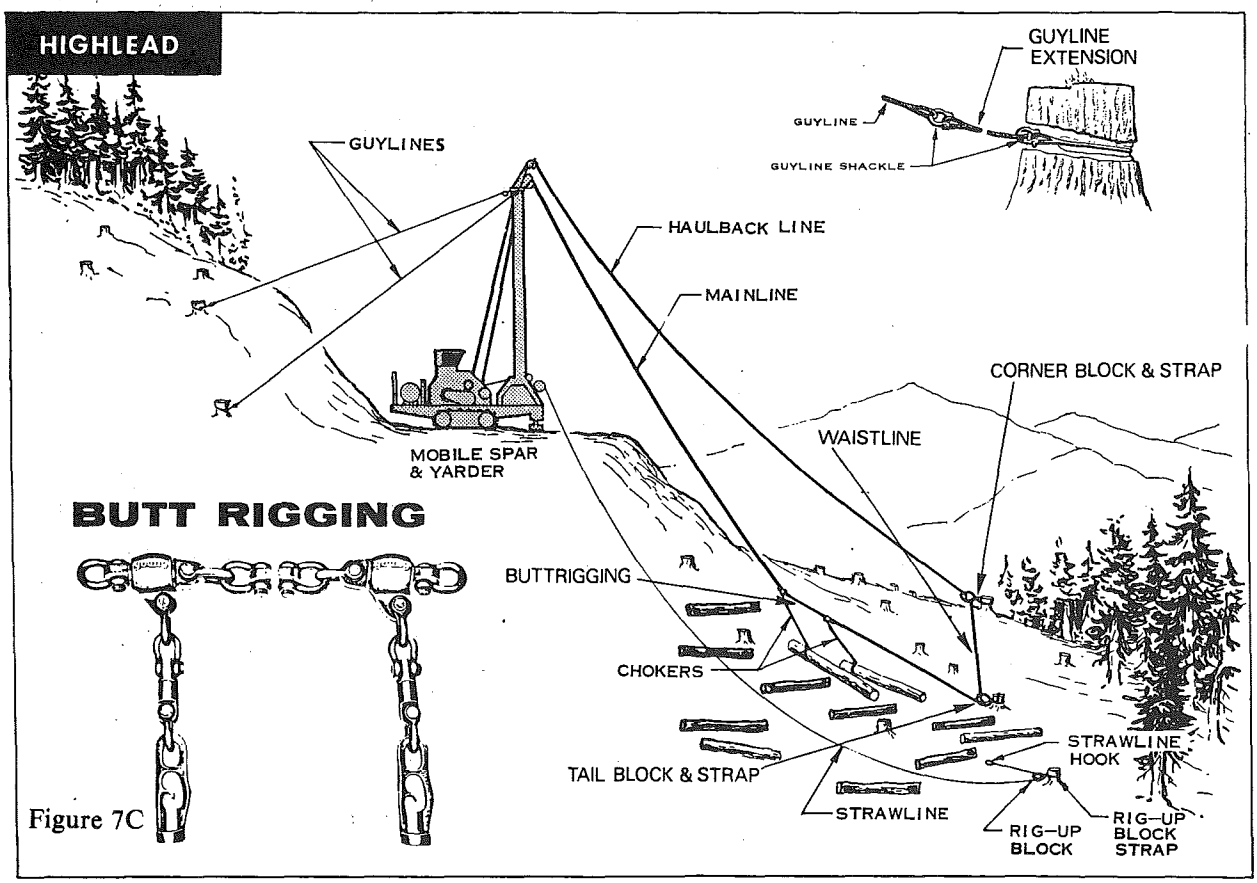


Figure 7C

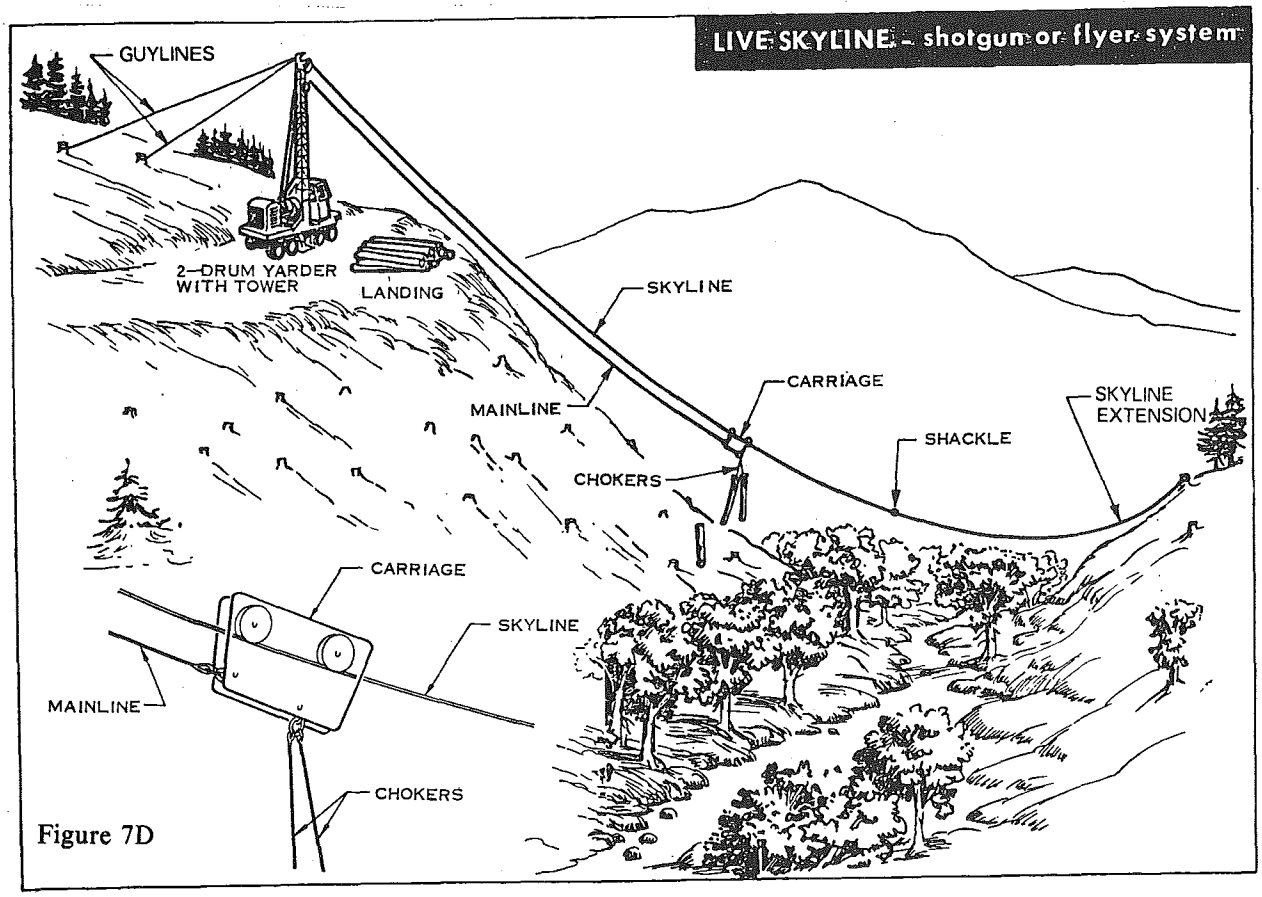


Figure 7D

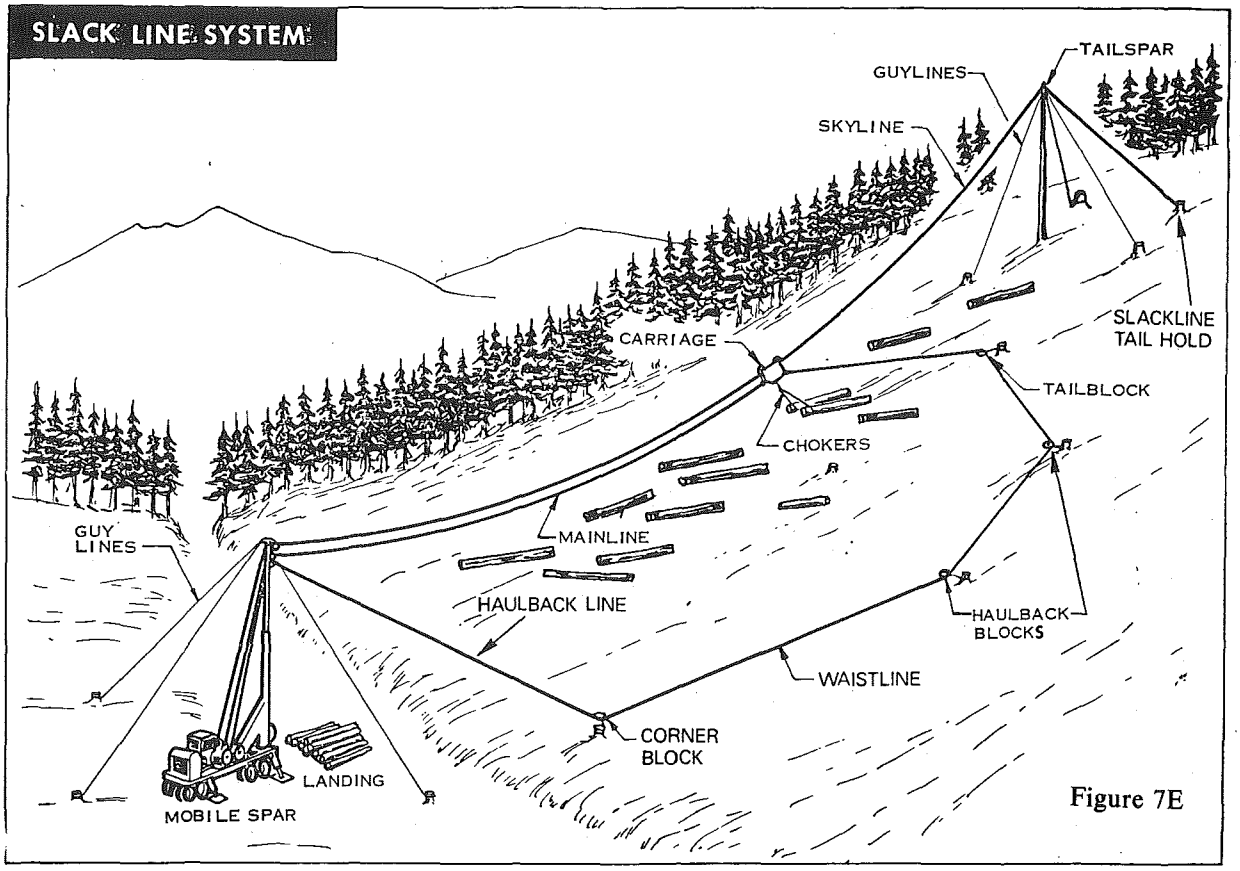
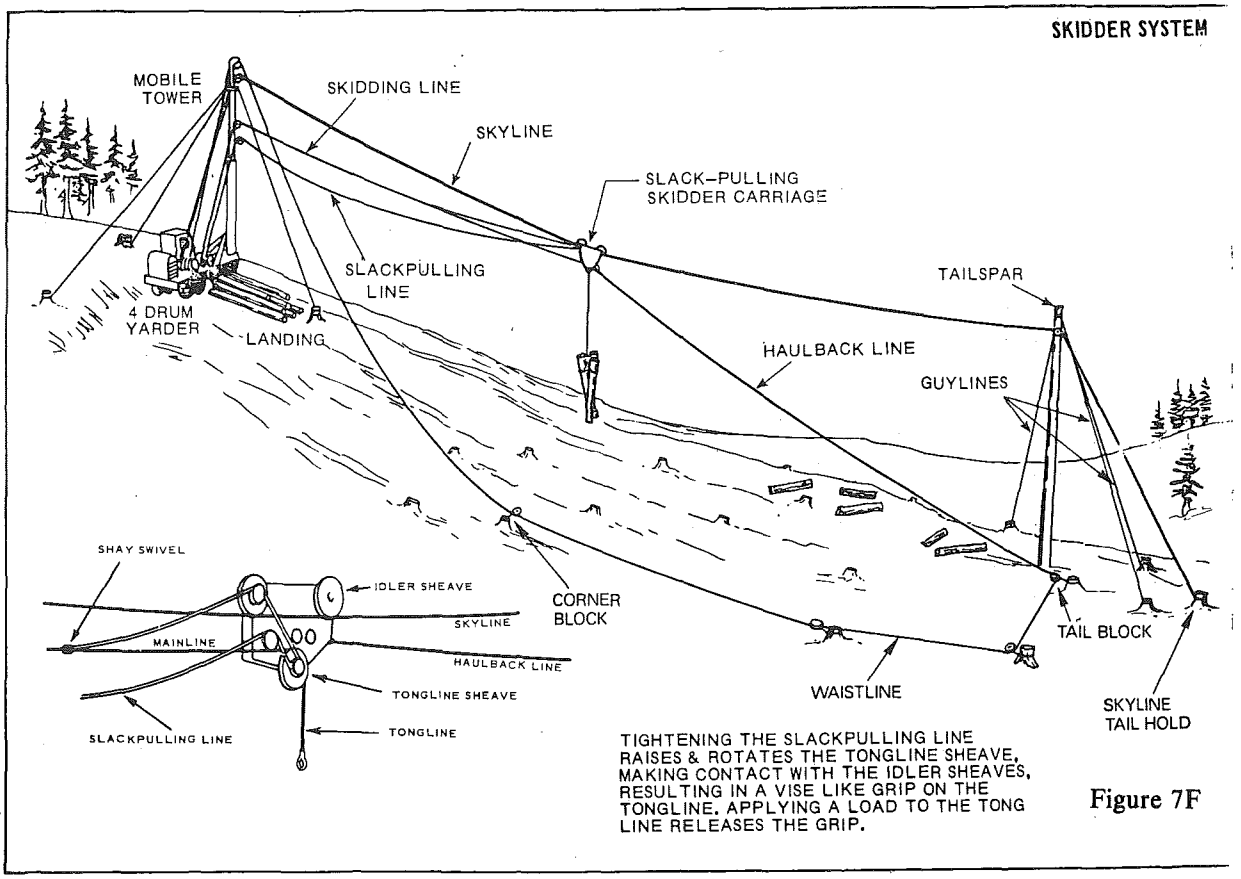


Figure 7E



TIGHTENING THE SLACKPULLING LINE RAISES & ROTATES THE TONGLINE SHEAVE, MAKING CONTACT WITH THE IDLER SHEAVES, RESULTING IN A VISE LIKE GRIP ON THE TONGLINE. APPLYING A LOAD TO THE TONG LINE RELEASES THE GRIP.

Figure 7F

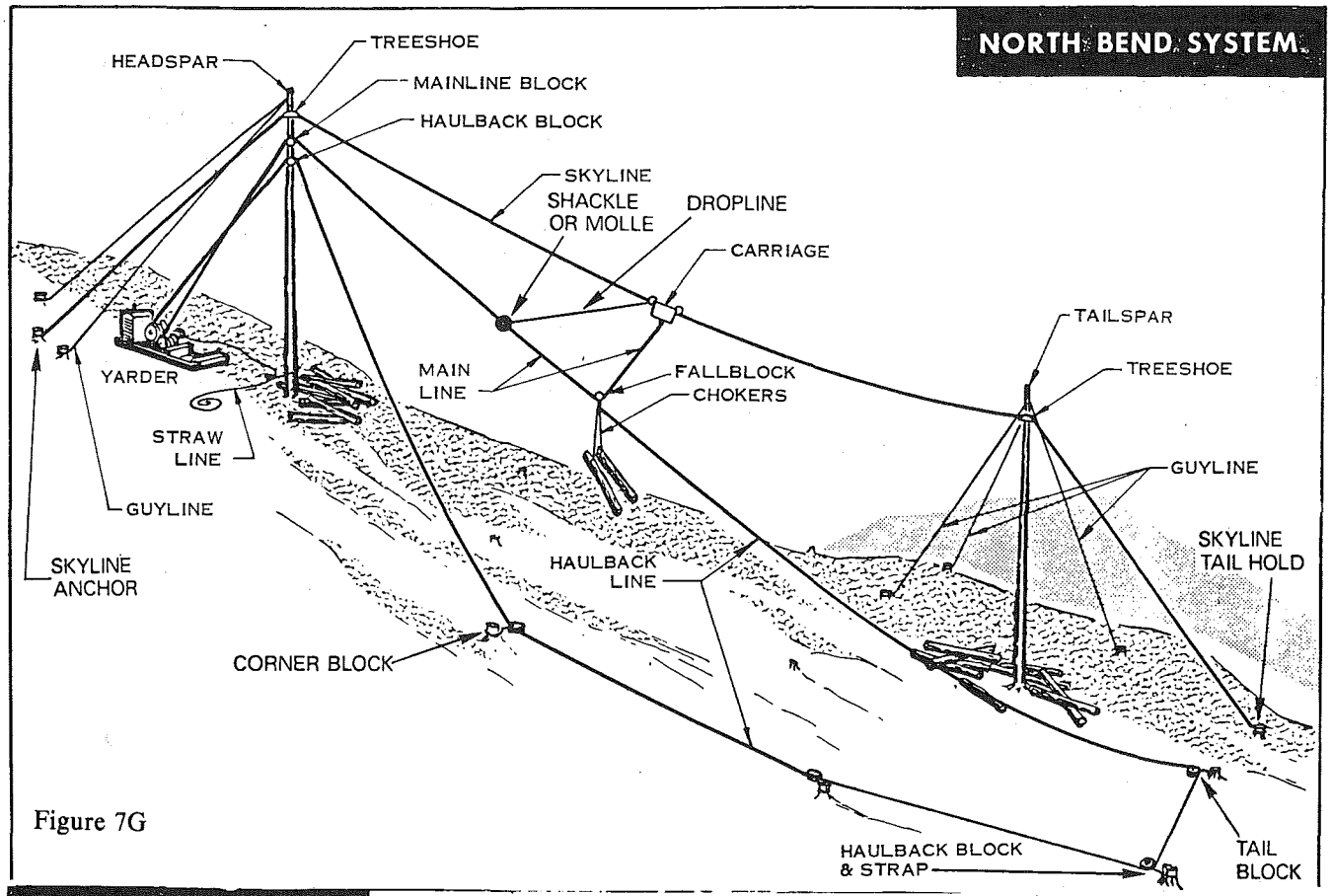


Figure 7G

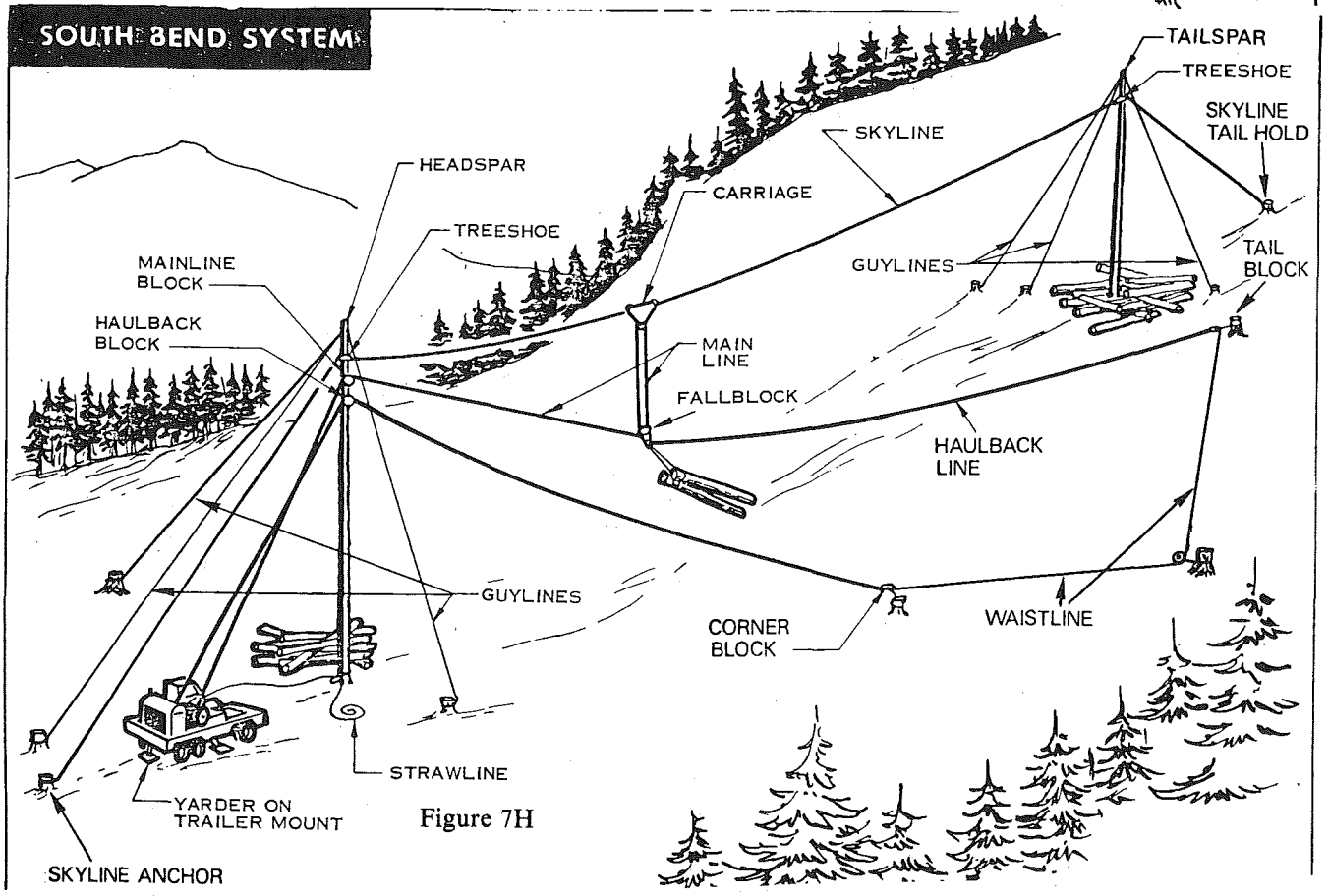


Figure 7H

STANDING SKYLINE -- RADIO CONTROLLED CARRIAGE

mobile tower

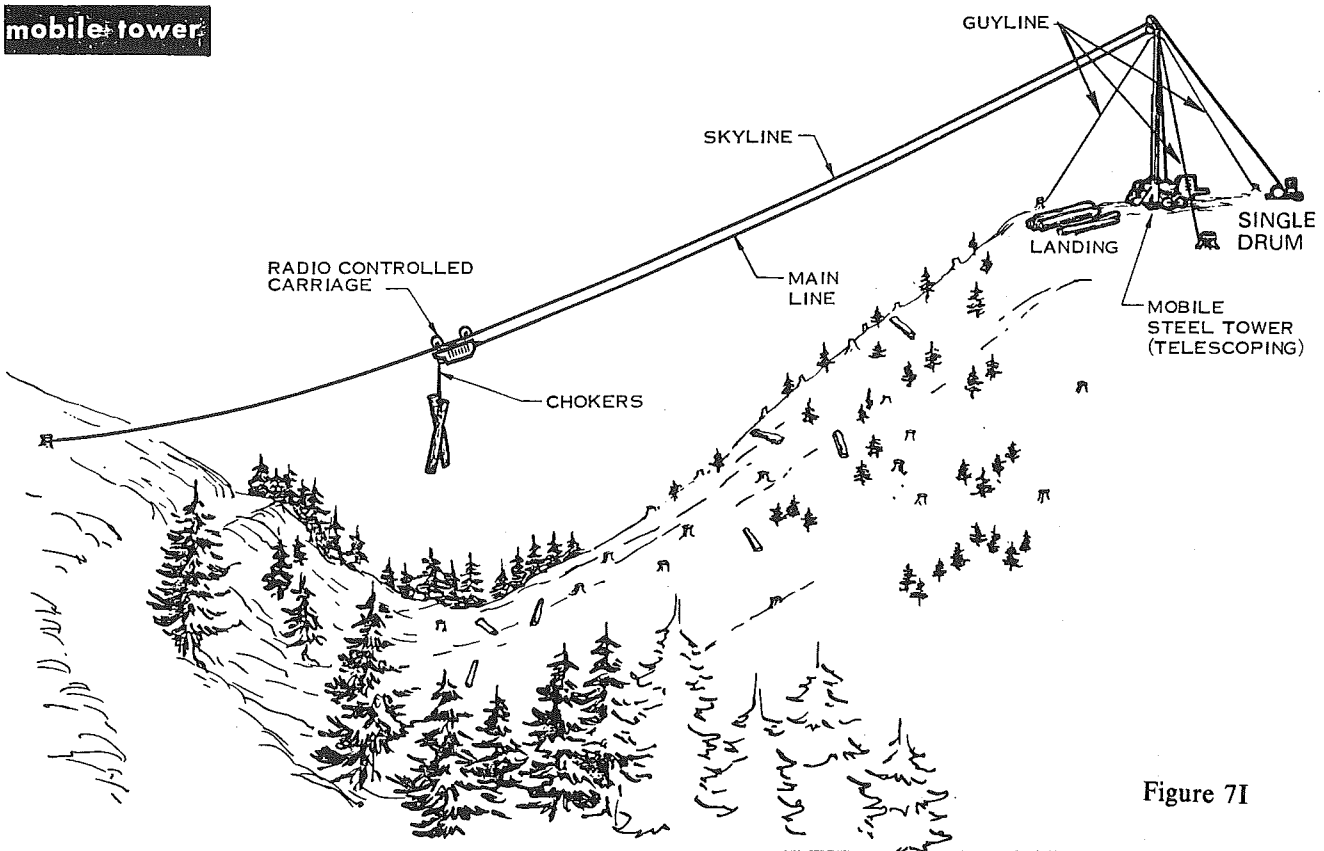


Figure 7I

SIDE MOUNT TOWER with mechanical slack pulling carriage

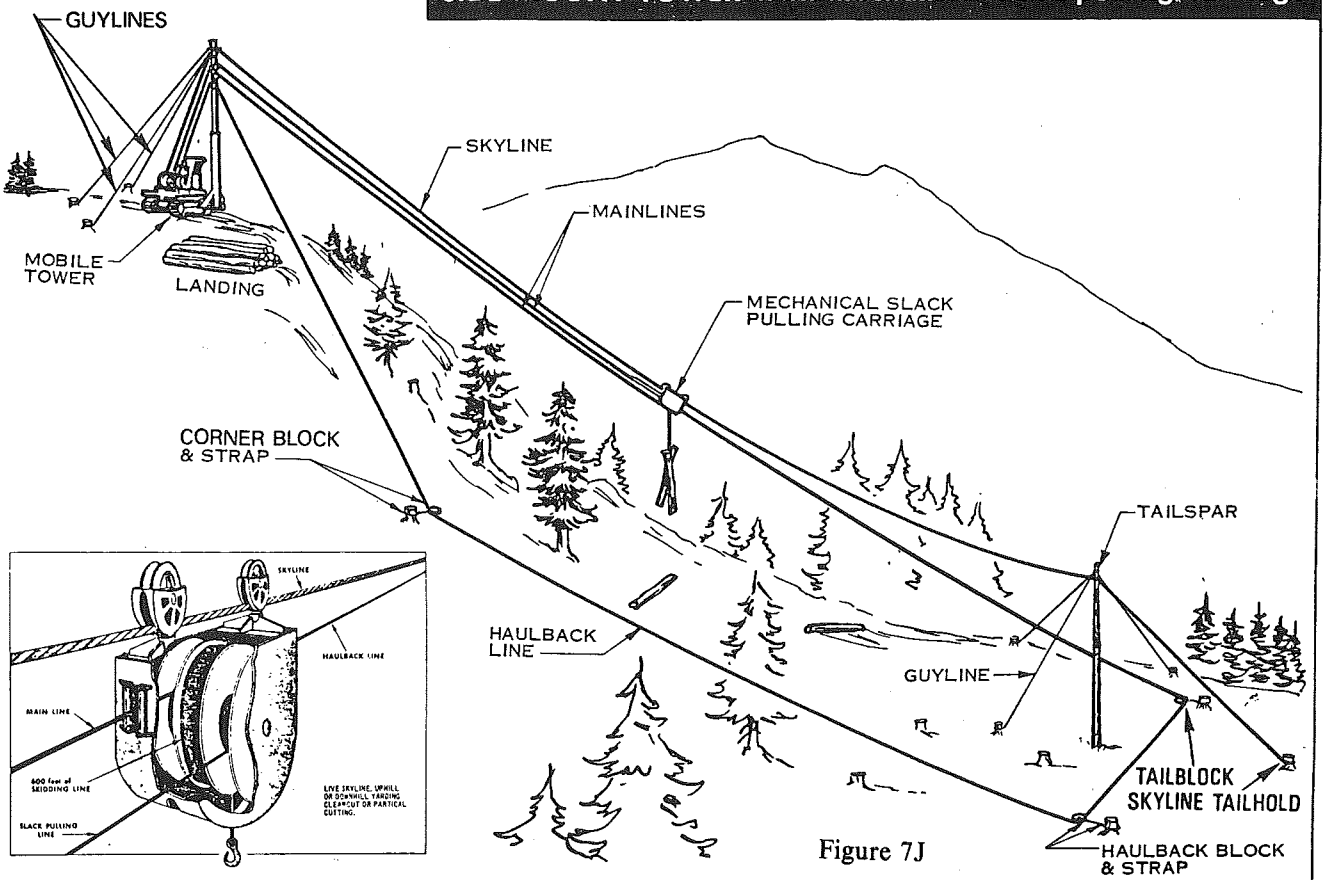


Figure 7J

PARTIAL CUTTING WITH RUNNING SKYLINE

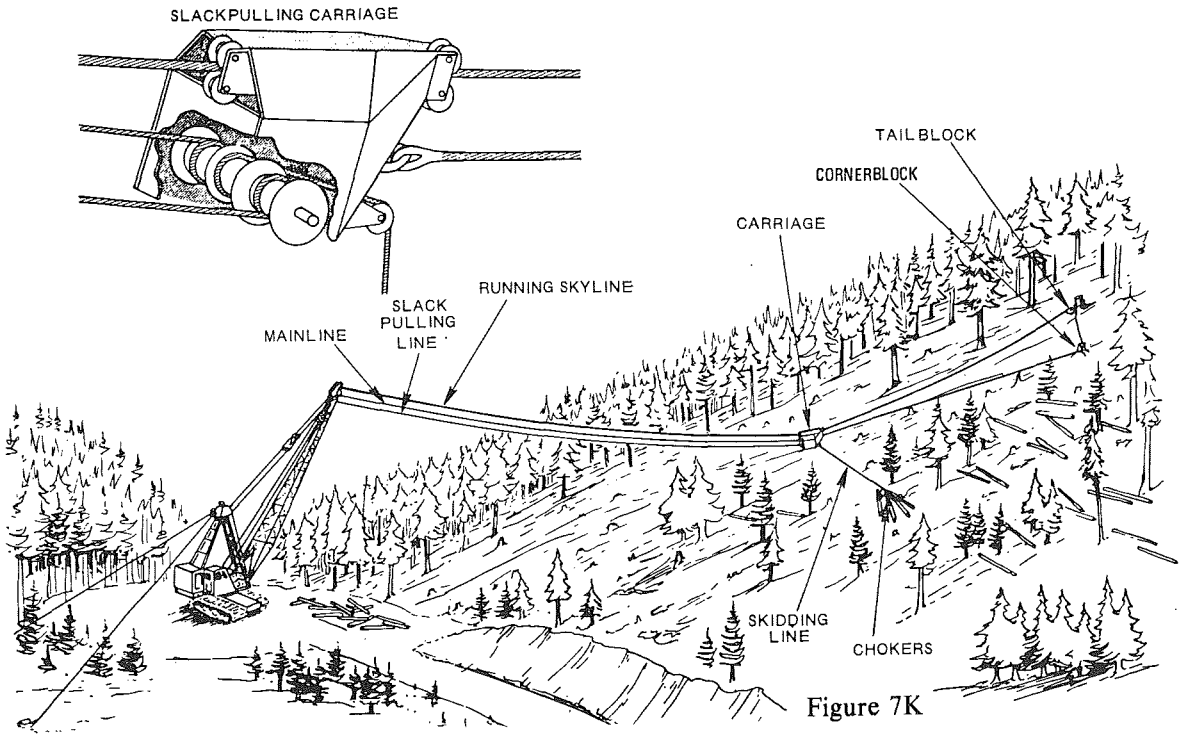


Figure 7K

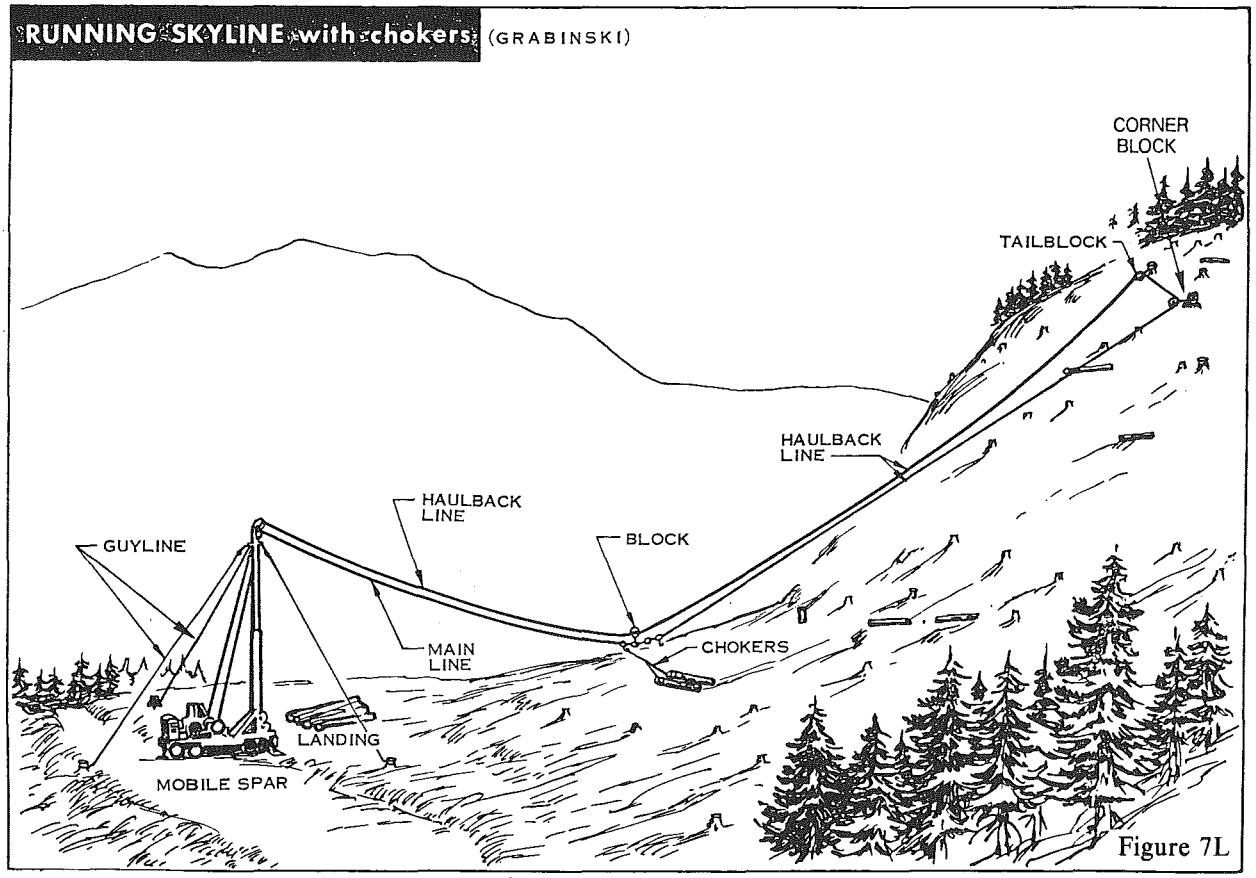


Figure 7L

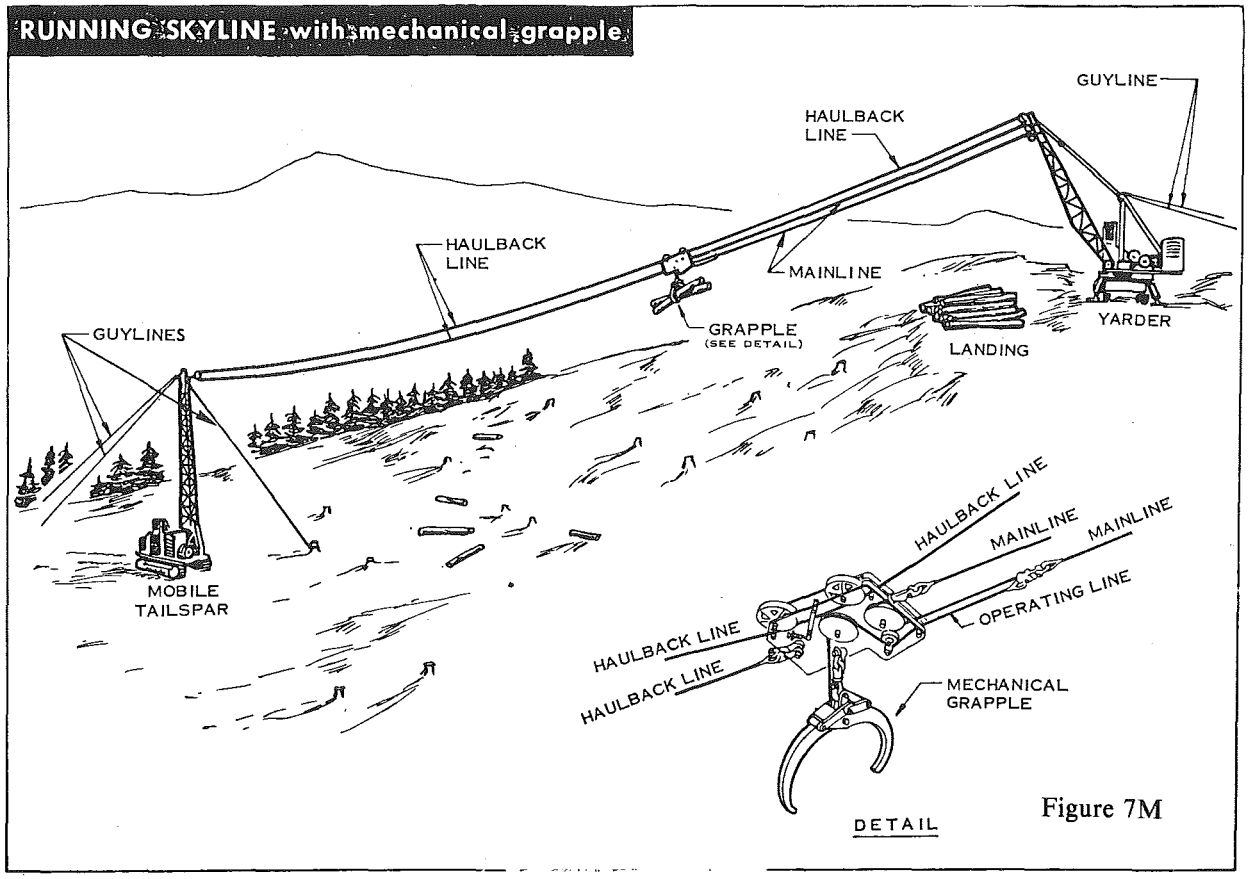


Figure 7M

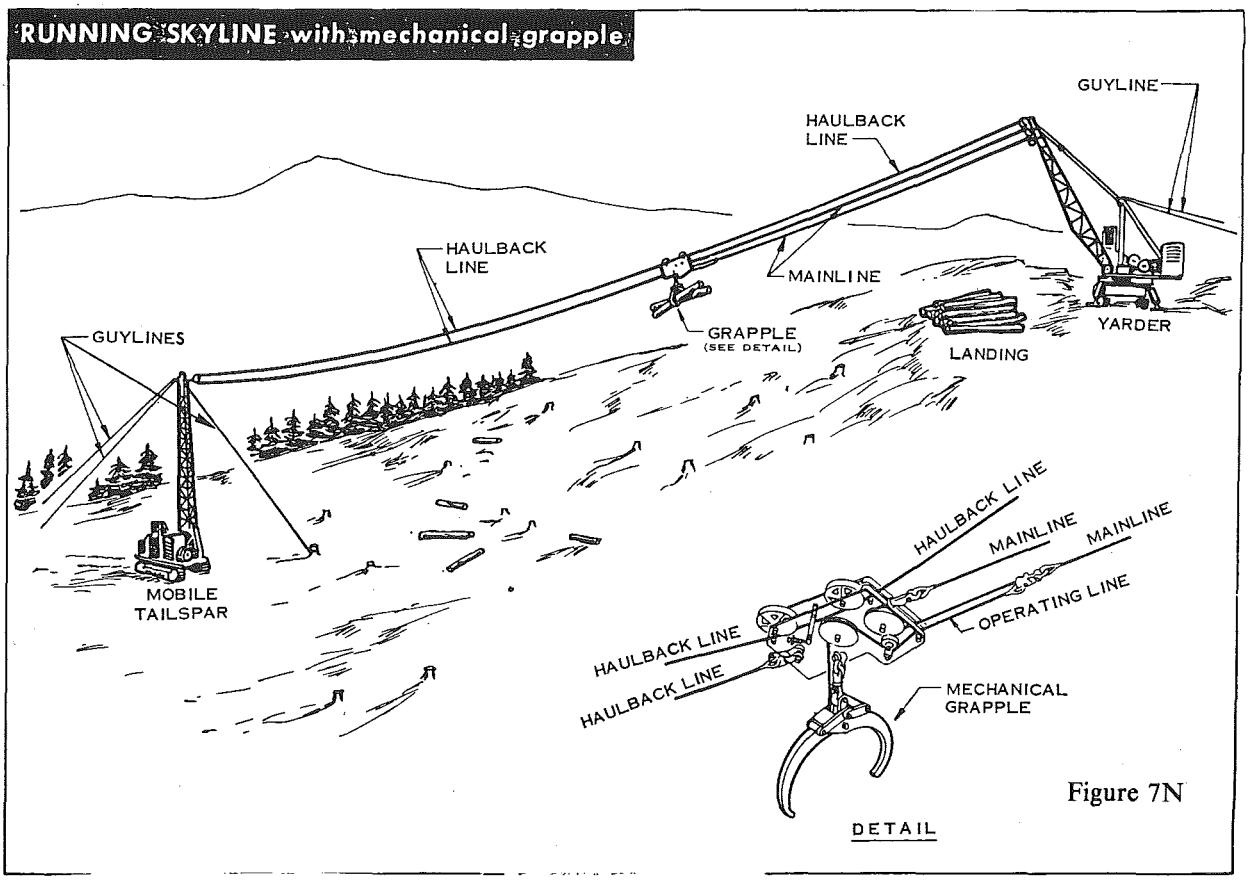


Figure 7N

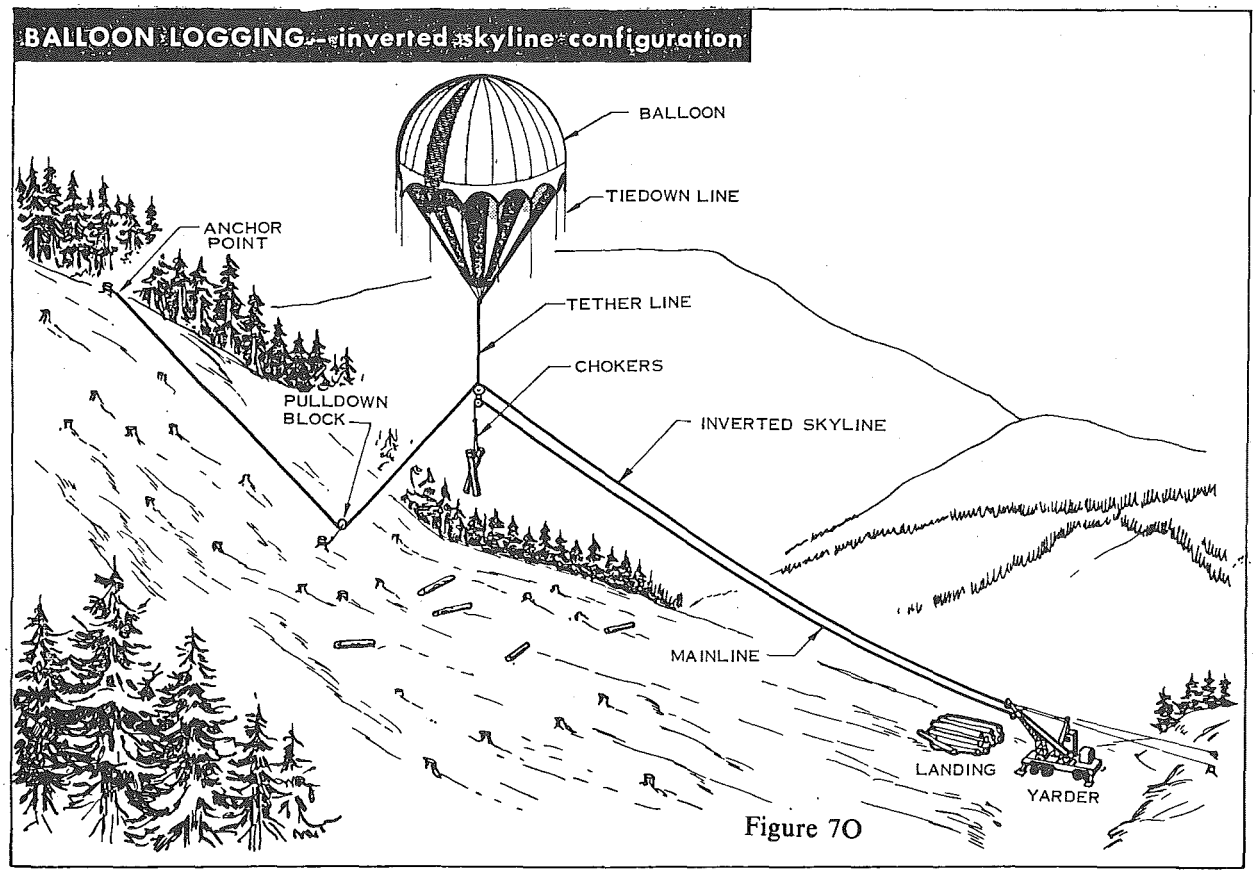


Figure 7O

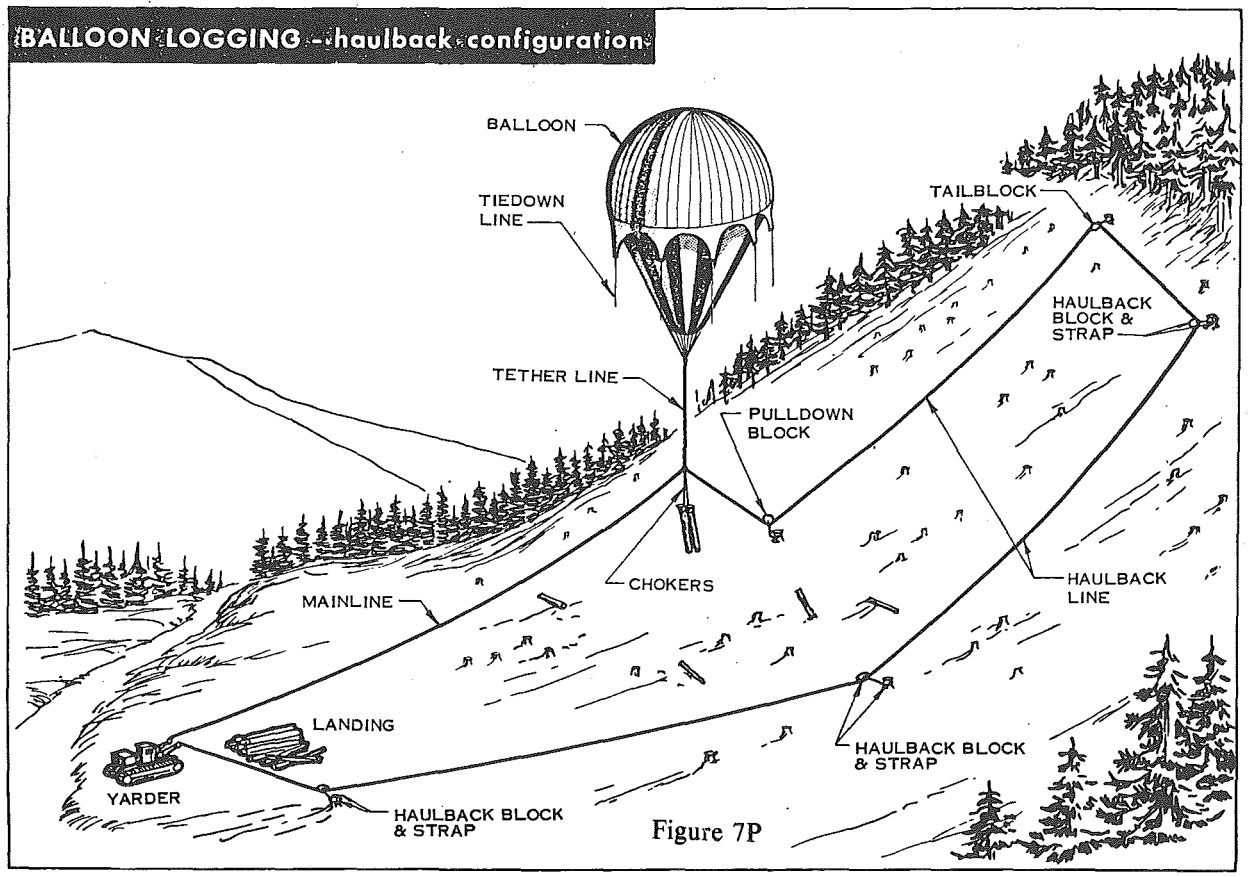


Figure 7P

HIGH LEAD LOGGING WHISTLE SIGNALS
– Means longer spacing between signals.

1 short	Stop all lines.
3 short–3 short	Ahead slow on mainline.
3 short	Ahead on mainline.
2 short	Ahead on haulback.
2 short–2 short	Ahead slow on haulback.
3 short–1 short	Ahead on strawline.
3 short–1 short–3 short	Ahead slow on strawline.
4 short or more	Slack mainline.
2 short–4 short	Slack haulback.
3 short–1 short–4 short	Slack strawline.
3 short–2 short	Standing tight line.
1 short–1 short	Tight line while lines are running, or break if running tight.
3 short	When rigging is in: Strawline back on haulback.
3 short / plus "X" number of shorts	When rigging is in: Indicates number of sections of strawline back on rigging.
3 short–1 short–2 short	Strawline back on rigging.
1 short	When rigging is in: Chaser inspect and repair rigging.
2 short	When rigging is in: No chokers back.
2 short–1 short / plus "X" number of shorts	Number of chokers back.
2 short–4 short	When rigging is in: Slack haulback–hold all lines until 2 short blown.
3 medium	Hooker.
3 medium–4 short	Hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long–1 short	Start or stop work.
7 long–2 short	Man injured, call transportation and stretcher.
1 long–1 short repeated	Fire.
Grabinski system	
2 short–1 short	Slack mainline and haulback together.
2 long	Take off or put on rider block.

Figure 7–Q

SKIDDER WHISTLE SIGNALS
– Means longer spacing between signals.

1 short	Stops moving carriage–stops or goes ahead on slack puller, as case may be, if carriage is stopped.
2 short	Go ahead on skidding line holding carriage.
1 short–2 short	Pick up skidding line, easy.
2 short–1 short	Shake up carriage to clear choker.
2 short–2 short	Ahead on receding line.
3 short	Ahead on carriage, holding at present level, using interlock.
3 short–3 short	Ahead easy on skidding line.
2 short–2 short–2 short	Slack skyline, cable down.
2 short–2 short–2 short–1 short	Pick up skyline, cable up.
2 short–2 short–4 short	Slack receding line.
2 short–4 short	Slack skidding line.
2 short–2 short–1 short	Tighten all lines.
1 short–4 short	Slack off slack puller.
1 short–2 short	Pick up slack puller when slack.
2 short–2 short / plus "X" number of shorts	When carriage is in: Number of chokers wanted.
2 short–2 short–1 long	Bull choker.
1 short	When carriage is in: Inspect butt rigging.
2 short–4 short / 1 short	For each additional ten feet of tong line.
1 long / plus "X" number of shorts	Number of coils of strawline wanted.
5 medium	Tail or second rigger.
5 medium–4 short	Tail or second rigger and his crew.
2 medium	Skidder head rigger.
3 medium–4 short	Hooker and his crew.
2 long	Ahead on transfer.
2 long–4 short	Slack transfer
1 short–3 short	Ahead on carriage with slack puller line.
1 long	Ahead on strawline.
1 long–4 short	Slack strawline.
1 long–3 short	Ahead easy on strawline.
5 long	Climber.
4 long	Foreman.
1 long–1 short	Start or stop work.
7 long–2 short	Man injured, call transportation and stretcher.
1 long–1 short repeated	Fire.

Figure 7–R

SLACKLINE WHISTLE SIGNALS
– Means longer spacing between signals.

2 short–2 short–2 short–1 short	First cable up when road has been changed and tail hold made fast.
2 short–2 short–2 short	Drop skyline.
1 short	Stop any moving line.
1 long	When logging, slack skyline.
2 short	Ahead on skyline.
1 long–2 short	Ahead easy on skyline.

3 short	Ahead on skidding line, holding haulback.
3 short–3 short	Ahead easy on skidding line with slack haulback.
4 short	Slack skidding line.
2 short–2 short / 2 short –2 short	Ahead easy on haulback with slack skidding line.
2 short–2 short	Ahead on haulback.
2 short–2 short–4 short	Slack haulback.
2 short / 3 short	Pick up skyline and skid.
2 short / 2 short–2 short	Pick up skyline and skin.
3 short–1 short	When carriage is in: Strawline back on haulback.
3 short–1 short–2 short	When carriage is in: Strawline back on carriage.
3 short–1 short	When strawline is out: Ahead on strawline.
3 short–2 short	Tight line.
3 short–1 short–4 short	Slack strawline.
3 short–1 short–3 short	Pull easy on strawline.
2 long	Ahead on transfer.
2 long–4 short	Slack transfer.
2 long–2 short–2 short	When carriage is in: Transfer back on carriage.
1 long / plus "X" number of shorts	When carriage is in: Number of coils.
2 short–2 short–1 short / plus "X" number of shorts	When carriage is in: Number of chokers.
1 short	When carriage is in: Inspect rigging, repair and send back.
2 short–2 short–4 short	When carriage is in: Slack haulback and hold all lines until 1 short is blown–then send back.
3 short–3 short	When carriage is in: Send back powder.
5 medium	Tail rigger.
5 medium–4 short	Tail rigger and his crew.
3 medium	Head hooker.
3 medium–4 short	Second hooker and his crew.
5 long	Climber.
4 long	Foreman.
1 long–1 short	Start or stop work.
7 long–2 short	Man injured, call transportation and stretcher.
1 long–1 short repeated	Fire.

Figure 7–S

RUNNING SKYLINE WHISTLE SIGNALS
– Means longer spacing between signals

1 short	Stop all moving lines
2 short	Skin carriage back
2 short–1 short	Slack haulback
2 short–2 short	Skin carriage easy
2 short–3 short	Standing tight line
1 short–2 short	Ahead on drop line
4 short	Slack drop line
1 short–4 short	Slack both mainlines
1 short–1 short	Stop drop line going up and move carriage forward
3 short	Move carriage forward
3 short–3 short	Move carriage forward easy
3 short–1 short	When strawline is out: Ahead on strawline
3 short–1 short–4 short	Slack strawline
3 short	When carriage is in: Strawline
3 short–X short	When carriage is in: Number sections
3 short–1 short–2 short	When carriage is in: Strawline back on carriage
2 short–X short	When carriage is in: Number of chokers
4 short	When carriage is in: Inspect rigging, repair and send back
1 short	When carriage is in: Hold all lines until 2 shorts, then send back
3 medium	Head hooker
3 medium–4 short	Hooker and his crew
4 long	Foreman
1 long–1 short	Start or stop work
7 long–2 short	Man injured; call transportation and stretcher
1 long–1 short (repeated)	Fire
3 short–1 long	Acknowledged by engineer to signify hazardous turn

Figure 7–T

TENSION SYSTEM SIGNALS

4	Release tension
1 short	Stop carriage and start unspooling tong line
1 short	Stop tong line
1 short	Resume unspooling tong line
1 short	Will stop any moving line or slack tong line when carriage is stopped
2 short–2 short	Go into interlock and go back
2 short–4 short	Slack haulback and let carriage down
After turn is set	
2 short	Go ahead on tong line
2 short–3 short	Go ahead easy on tong line
3 short	Go into interlock and take carriage to landing
3 short–3 short	Ahead on carriage easy

1 short–2 short	Increase tension on tong line when carriage is going in
short–1 short	Decrease tension on tong line when carriage is going in

Figure 7–U

[Statutory Authority: RCW 34.04.025, 49.17.040 and 49.17.050. 81–05–013 (Order 81–3), § 296–54–559, filed 2/10/81. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79–10–081 (Order 79–14), § 296–54–559, filed 9/21/79.]

WAC 296–54–561 Log loading--General requirements. (1) Loading operators shall have a clear view of the landing and of the cars or trucks being loaded.

(2) Persons shall not ride logs, tongs, grapples or other loading devices.

(3) The use of plain spiked loading hooks without a bell is prohibited for loading logs.

(4) All limbs or knots that would project beyond the stakes or legal height shall be removed before the log is loaded on the car or truck.

(5) When the loading operator is not able to see the loading operation, signals shall be given by a designated person, who shall have a clear view of the operations and shall be visible to the operator. Hand signals used shall be as illustrated in Figure No. 7, following WAC 296–54–565.

(6) Logs shall not be swung or suspended over occupied equipment by loading machines on landings. Persons shall not stand or walk under suspended logs.

(7) No one shall ride loads while cars or trucks are being spotted or dropped, except those whose regular duties require them to do so.

(8) Cars and trucks shall not be moved until the head loader or loading machine operator is positive that all persons are in the clear.

(9) When grapples, trip tongs or similar devices are used in the loading operation, they shall be lowered to the ground whenever the machine is unattended. If the device can tip or fall over, it shall be laid on its side on the ground.

(10) While logs are being loaded, no one shall remain on the load, chain deck or behind the cab protector. Any unattached material shall be removed from the top of the cab protector before the truck is moved from the landing.

(11) To control the movement of a log truck being loaded, a positive audible means of communication shall be established between the truck driver and the loading machine operator. The established means of communication shall be familiar to all employees on the landing and shall include a danger signal to warn employees in case of an emergency. If a movable loader is being used, the loader operator shall sound a warning signal before moving the loader. The signals so used shall be easily distinguishable from other whistle or horn signals used in the landing area.

(12) When signals are used at a landing, reload or deck to control the movement of logging trucks in accordance with subsection (11) of this section, the following signals shall be used:

1 short	Stop
1 short	Ahead
2 shorts	Back
2 shorts then 2 shorts ...	Wrapper
3 shorts	Check scales
1 long–repeated	Danger
1 long	Loader moving

(13) No person shall be permitted alongside or underneath trucks being loaded or on the load until communication has been established with the loading machine operator and truck driver and assurance has been received that it is safe to be there.

(14) Power saws shall not be operated on top of loaded logging trucks.

(15) Standing underneath a suspended trailer or its reach is prohibited.

(16) The outside bunklogs (bottom tier) shall be loaded tight against the stakes.

(17) Logs shall be loaded in a manner to prevent undue strain on wrappers, binders, bunk stakes and chains or straps.

Note: Logs shall be considered to be "within the stakes" when one–half the log diameter is below the top of the stakes.

(18) Logs in any tier or layer unsecured by stakes or chalk blocks shall be well saddled and have their diameter centers inside the diameter centers of the outer logs of the next lower tier or layer.

(19) Bunk and wing logs shall extend not less than twelve inches beyond the front and rear bunks or stakes. On rigid type bunks, they shall extend not less than six inches beyond the front and rear bunks or stakes.

(20) Double ended logs, above the stakes, shall not be loaded on the side of the load from which the binders or wrappers are intended to be released from.

(21) Logs shall be loaded in a manner that will not impair full and free movement of the truck and trailer.

(22) Each log not contained within the stakes shall be secured with at least two wrappers before the truck leaves the immediate landing area.

(23) Loads or logs shall not be moved or shifted while wrappers and binders are being applied or adjusted.

(24) Stable loads. Loads shall be built up or loaded in a manner to be stable without the use of wrappers. Wrappers shall be considered only as precautionary measures to ensure stability of the load.

(25) Loading equipment maintained. All loading machines and equipment shall be maintained in a safe condition. The critical parts of such equipment, such as bolts in base plates, etc., that cannot be inspected while in operation, shall be inspected at reasonable intervals by a qualified person when the machine is shutdown. If indications of failure or weakness is noted or suspected, the parts in question shall be examined by an approved method and if found to be defective, shall be repaired or

replaced before the equipment is put back into operation.

(26) Tongs pulling out. Where there is a danger of tongs or hooks pulling out of the log, straps shall be used. Tongs may be used on extra–large logs provided the logs are barked and notched to provide a secure hold.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79–10–081 (Order 79–14), § 296–54–561, filed 9/21/79.]

WAC 296–54–563 Log loading—Special requirements. (1)(a) Loading machines shall be equipped with an effective parking braking system which is not dependent on the air or hydraulic pressure which is used to stop the machine while traveling.

(b) A braking system shall be installed on the load line and boom supporting equipment which shall be capable of stopping and holding, in any position, the maximum load for which the loading machine is designed. The equipment shall be of such design as to lower the boom with power. Booms not having power down shall be dogged before workers enter the hazardous area around the boom. Workers shall not be under any boom while it is being held by the brake.

(2) A minimum distance of thirty–six–inch clearance shall be maintained between the counterweight of a loading machine and trees, logs, banks, trucks, etc., while the machine is in operation. If this clearance cannot be maintained, suitable barricades with warning signs attached, similar to a standard guardrail, shall be installed to isolate the hazardous area. "DANGER – 36–inch clearance" shall be marked in contrasting colors on sides and face of counterweight on shovels, loaders and other swing–type logging equipment.

(3) Persons shall not work under a slack puller. A warning line, of sufficient length to reach the ground at all positions, shall be hung from any slack puller.

(4) Where a backstop of a loading machine is so constructed that it could crush the operator's cab should the heel boom be pulled or pushed too far backward, positive boom stops shall be installed.

(5) All mobile fork–lift type log handling machines shall be equipped with a means or mechanism to prevent the logs from leaving or rolling off the forks, and shall be used at all times while moving logs.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–11–057 (Order 80–15), § 296–54–563, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79–10–081 (Order 79–14), § 296–54–563, filed 9/21/79.]

WAC 296–54–565 Log loading—Self–loading log trucks. (1) A safe means of access and egress shall be provided to the operator's loading work station.

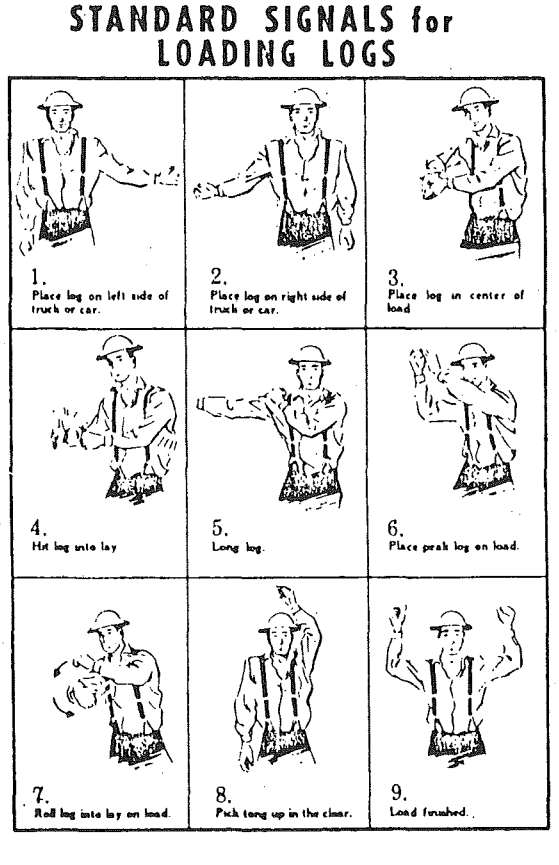
(2) Self–loading log truck operators shall not unload their own load unless a positive means of securing the logs has been provided when binders and wrappers are removed.

(3) New self–loading log trucks purchased and put in operation after January 1, 1980, shall be equipped with:

(a) A check valve installed on the jib boom; and

(b) A seat that is offset from the point of attachment of the boom. The seat and boom structure shall rotate concurrently.

(4) The operator of a self–loading log truck shall not heel the log over his head.



[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79–10–081 (Order 79–14), § 296–54–565, filed 9/21/79.]

WAC 296–54–567 Motor truck log transportation—General requirements. (1) Prior to use, the operator shall make a complete daily inspection of the truck and trailer with particular attention to steering apparatus, lights and reflectors, brake boosters, brake hoses and connections, reaches, and hitches (couplings). The brakes shall be tested before and after movement of the vehicle. The operator shall submit a written list of necessary repairs to a person designated by the employer.

(2) Any defective parts that would make the vehicle unsafe to operate, shall be replaced or repaired before the vehicle is placed in service.

(3) All motor vehicles operated on public roads shall comply with the rules of the regulatory body having jurisdiction. Motor vehicles used on roads not under the control of the state department of transportation, counties or cities shall be equipped with accessories necessary for a safe operation including operable head lamps and at least two tail lamps and brake lamps which shall emit a red light plainly visible from a distance of one thousand feet to the rear and shall also have two reflectors

visible at night from three hundred fifty feet when directly in front of properly adjusted motor vehicle head lamps.

(4) Truck tires worn beyond a point of safety or not meeting the safety requirements of the jurisdiction having authority as to tread wear and tire conditions, shall not be used.

(5) The driver shall do everything reasonably possible to keep his truck under control at all times and shall not operate in excess of a speed at which he can stop the truck in one-half the distance between him and the range of unobstructed vision.

(6) The area between the truck frame members, extending from the cab rearward as far as necessary to provide a safe work area, shall be covered with suitable nonslip type material. Log trucks which have logs scaled at stations shall be provided with a platform on each side extending outward from the frame members at least eighteen inches, and shall be eighteen inches long or as near this dimension as the design of the truck will permit. The treading surface of the platforms shall be of nonslip type material and the platform shall be capable of safely supporting a five hundred pound load.

(7) To protect the operator of vehicles from loads, a substantial bulkhead shall be provided behind the cab which shall extend up to the height of the cab.

(8) If logs must be scaled or branded while the loading operation is being carried on, the loading operation shall cease while the scaling or branding is being done so that the scaler or person doing the branding is not subjected to any hazards created by the loading operation.

(9) When at the dump or reload or where logs are scaled or branded on the truck, the logs shall be scaled or branded before the binders are released.

(10) All vehicles, where vision of the operator in the direction of travel is impaired by the load or vehicle, shall be moved only on a signal from a worker who shall have a clear view in the direction in which the vehicle is to be moved.

(11) Where a bridge or other roadway structure is posted with a load limit sign, log truck drivers or operators of other heavy equipment are prohibited from driving a load in excess of the posted limit over such structure.

(12) Persons shall be allowed to ride only when in the cab of the log truck.

(13) All trucks shall keep to the right side of the road except where the road is plainly and adequately posted for left side travel.

(14) A method shall be provided to assure that the trailer will remain mounted on the truck while driving on highways or logging roads.

(15) When trucks are towed on any road, the person guiding the vehicle being towed shall, by prearranged signals, govern the speed of travel. The towing of vehicles shall be done at a reasonable speed and in a prudent manner. A tow cable or chain over fifteen feet in length shall have a white flag affixed at the approximate center, however, it is recommended that a rigid tow bar be used for this purpose.

(16) All air lines, air chambers and systems shall be free of leaks and be able to maintain air pressure on constant brake application with the motor shut-off for one minute, or air pressure does not drop more than 4 p.s.i. in one minute with the engine running at idling speed and the service brake applied.

(17) All rubber-tired motor vehicles shall be equipped with fenders. Mud flaps may be used in lieu of fenders whenever the motor vehicle is not designed for fenders.

(18) Seat belts and anchorages meeting the requirements of 49 CFR Part 571 (D.O.T. Federal Motor Vehicle Safety Standards) shall be installed and used in all motor vehicles.

(19) All trucks shall be equipped with doors with operable latches, or a safety bar or strap shall be provided in lieu of the door.

(20) All trucks shall be equipped with a means to protect the operator from inclement weather.

(21) Log trucks shall not approach a landing while there is danger from incoming logs.

(22) Log truck drivers shall stop their vehicle, dismount, check and tighten loose load wrappers and binders, either just before or immediately after leaving a private road to enter a public road.

[Statutory Authority: RCW 34.04.025, 49.17.040 and 49.17.050. 81-05-013 (Order 81-3), § 296-54-567, filed 2/10/81. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-567, filed 9/21/79.]

WAC 296-54-569 Motor truck log transportation--Brake requirements. (1) Motor logging trucks and trailers shall be equipped with brakes or other control methods which will safely stop and hold the maximum load on the maximum grade. When unattended trucks are parked on a grade, in addition to setting the brakes, the wheels shall be chocked or blocked.

(2) Logging truck tractors having more than two axles need not have brakes on the steering axle wheels.

(3) All trucks equipped with air brakes shall be also equipped with a readily visual or audible low air pressure warning device in good working order.

(4) Engine-type brakes shall be considered as auxiliary controls, not a substitute for the requirement for a service brake system.

(5) Brake drums shall be maintained free of cracks, breaks or defects. Defective brake drums, cans, shoes or air lines shall be immediately repaired or replaced.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-569, filed 9/21/79.]

WAC 296-54-571 Motor truck log transportation--Trailer hitches and safety chains. (1) All log truck and trailer combinations shall be equipped with approved hitches (couplings) which shall:

(a) Be capable of withstanding, in any direction, the potential stresses imposed;

(b) Be of a design which would not be rendered inoperative by dirt and debris and shall be locked securely and positively;

(c) Be attached to the truck frame or extension of the truck frame by means of not less than four machine

bolts and nuts (120,000 p.s.i. material or better) 3/4-inch diameter or larger, secured by lock nuts. Other means of attachment furnishing strength equal to or greater than the above may be accepted if of approved design and application; and

(d) Hitches (couplings) or parts that are broken, cracked, excessively worn, or otherwise defective hitches shall be repaired before use.

(2) Each log truck and trailer combination or log truck and independent trailer combination shall be provided with two or more safety chains or cables with a rated breaking strength of not less than the gross weight of the towed vehicle, be capable of holding the trailer in line in case of failure of the hitch assembly, and be as follows:

(a) Be permanently attached to the frame of the truck or an extension of the truck frame;

(b) Form a separate continuous connection between the truck frame or extension of the truck frame and the reach or trailer;

(c) Be attached not more than twelve inches from the eye of the reach or trailer;

(d) Be of a length short enough to prevent the trailer reach or tongue from contacting the ground in the event of disengagement from the truck;

(e) Be of a design to provide a positive connection that cannot be rendered inoperative by any condition of use or exposure.

(3) Safety chains and cables shall be replaced immediately if they contain cut, cracked, or excessively worn links, or frayed, stranded, or otherwise defective wire rope.

(4) Butt welding of safety chain links to reach truck frame, or extension of truck frame is prohibited.

(5) Cold-shuts may be used in safety chains provided they are welded shut and one size larger than the chain being used.

(6) There shall be no welding or hole drilling in frames on which the manufacturer recommends this not be done.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-571, filed 9/21/79.]

WAC 296-54-573 Motor truck log transportation--Reaches and bunks. (1) Log trailers shall be connected to tractors by reaches of a size and strength to withstand all normal imposed stresses. Spliced wooden reaches shall not be used. Proper repair of metal reaches by welding will be permitted if done by a qualified welder.

(2) Hand-holds or other facilities shall be installed on trailer tongues or trailer reaches if workers are required to manually assist in coupling them to their tractors or trucks.

(3) A positive means, other than clamp and in addition to the clamp, shall be installed on the reach of log truck trailers when the trailers are being towed without a load.

(4) Persons shall never enter the area below a suspended load of logs. At dumps where the load must remain suspended above the bunks until the truck is moved away, and when the trailer is the type with a compensating pin in the reach, a method shall be utilized which will allow the trailer to be towed away from the danger area.

(5) The reaches of unloaded trailers being towed shall be provided with and use a minimum one-inch pin near the end or an equally effective means to prevent pulling or stripping through the tunnel.

(6) Reach locks, clamps, or tighteners shall be of the type that will securely lock the reach in the tunnel.

(7) No reach of less than the maximum size usable in the tunnel of a trailer shall be permitted.

(8) Alteration of trailer tunnel to permit reduction of reach size is prohibited.

(9) Every truck or truck and trailer engaged in the transportation of logs loaded lengthwise, shall be equipped with bunks and chock blocks or stakes.

(10) Log bunks or any part of bunk assembly bent enough to cause bunks to bind, shall be straightened. Bunks shall be sufficiently sharp to prevent logs from slipping. Trip type stakes shall be properly secured and locked in a manner which will prevent them from accidentally tripping or falling.

(11) All trucks with swivel type bunks shall have bunk locks or an equivalent system of holding the bunks in place while loading logs.

(12) The bunks or bolsters of any truck or trailer shall be either curved upward or straight. Bunks with ends lower than their centers are prohibited.

(13) Sufficient clearance between the bunk and bunk rider shall be maintained to prevent bunk binding.

(14) Trailer bunks shall be provided with a false or tilt bunk. The channel of the bunk shall be kept reasonably free of debris.

(15) Stakes and stake extensions shall be installed and maintained so that the angle between bunks and stakes (and extensions if used) shall not exceed ninety degrees when loaded.

(16) Frames, reaches, bunks and running gear of log trucks shall be maintained free of cracks, breaks and defects. If defects are found, they shall be immediately repaired or the part replaced.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-573, filed 9/21/79.]

WAC 296-54-575 Motor truck log transportation--Stakes, stake extensions and chock blocks. (1) Trucks and trailers shall be equipped with bunk stakes or chock blocks of strength and sized material to perform their intended function.

(2) Stake extensions shall not be used unless all component parts of the bunking system are of sufficient size and strength to support the added stresses involved. Stake extensions shall be secured by safety chains or other devices to prevent their accidental displacement.

(3) The linkage used to support the stakes or chocks must be of adequate size and strength to withstand the maximum imposed impact load. Molles or cold shuts are prohibited in chains or cables used for linkage.

(4) Stake chains or cables shall be equal to or better than "high test" steel chain or "plow steel" wire rope, and shall be of a size necessary to meet the requirements

of a safe working load of not less than six thousand six hundred pounds. (3/8–inch alloy chain, 7/16–inch high test chain of welded link construction, and 5/8 inch improved plow steel cable in 6 x 19 and 6 x 37 construction meet this requirement.)

(5) Bunk chains containing cut, cracked, excessively worn, or otherwise defective links, shall be immediately removed from service. Molles, cold–shuts (welded or otherwise), or bolts are not permitted in bunk chains.

(6) The use of frayed, stranded, or otherwise defective wire rope for chock block cable or stake straps is prohibited.

(7) Only chain links approved for welding (and properly welded) or approved repair links which will develop a strength equivalent to the chain, are permissible for repairs or attachments to stake chains or binder chains.

(8) Chains or cables used to secure stakes or chock blocks shall be secured in a manner which will not necessitate hammering directly on them to release the stakes or blocks. Keyhole slots and similar methods of securing chains are prohibited.

(9) Deformed or defective stakes, stake securing or stake locking devices, or bunks shall be immediately repaired or removed from service.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80–11–057 (Order 80–15), § 296–54–575, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79–10–081 (Order 79–14), § 296–54–575, filed 9/21/79.]

WAC 296–54–577 Motor truck log transportation--Wrappers and binders. (1) On log trucks equipped with stakes, the following requirements shall apply:

(a) In the hauling of a one log load, one wrapper chain or cable shall be required and secured to the rear bunk. The log shall be properly blocked or secured in a manner which will prevent it from rolling or shifting. An additional wrapper secured to the front bunk is optional.

(b) In the hauling of two log loads, not less than two wrapper chains or cables shall be used to secure the load. The logs shall be properly blocked to prevent them from rolling or shifting.

(c) On loads consisting of three or four logs not over forty–four feet in length, the load shall be secured by not less than two properly spaced wrapper chains or cables. Ends of short logs not secured by such wrappers shall be secured with extra wrappers. If any log is over forty–four feet in length, the load shall be secured by not less than three properly spaced wrappers.

(d) Loads consisting of five or more logs, when the logs are all seventeen feet or less in length, shall be secured by not less than two properly spaced wrappers. Loads consisting of five or more logs, when any log is over seventeen feet in length, shall be secured by not less than three properly spaced wrappers.

(2) On log trucks equipped with chock blocks, the following requirements shall apply:

(a) In the hauling of a one log load, one wrapper chain or cable shall be required and secured to the rear bunk and the log shall be properly blocked in a manner to prevent it from rolling or shifting.

(b) One additional wrapper chain or cable shall be required on log trucks using chock blocks over and above the requirements in subdivisions (1)(c) and (d) of this section.

(3) In the case of short logs loaded crosswise, the following method of securing the load shall be used if the truck or trailer is not provided with solid ends of a height sufficient to prevent any log in the load from rolling off: Not less than two chock blocks shall be used at each open end of the vehicle and the load shall be held with at least two wrapper chains or cables. The wrappers shall be firmly attached to the end of the truck or trailer. Rigid standards or stakes may be used in lieu of chock blocks but each such standard or stake shall be either rigidly connected to the bed of the truck or trailer or shall be placed in a tight–fitting socket at least 12 inches in depth. Other means furnishing equivalent security may be acceptable.

(4) When two wrappers are required, they shall be applied within six feet of the front and rear bunks. When more than two wrappers are required, the front and back binder shall be applied within six feet of the front and rear bunks.

(5) To properly secure short logs, binders shall be placed near the end, not less than twelve inches from the end of the log.

(6) No log loaded on top or in outside saddles of a load shall be transported unless secured by not less than two wrapper chains or cables, one of which shall be placed near each end of such log.

(7) All wrappers and binders shall be fastened in place prior to tightening to prevent the displacement of logs on the top of the load.

(8) All wrapper chains or cables, except in the case of one log loads, shall entirely surround the load. This does not apply to gut–wrappers.

(9) Gut–wrappers, when used, shall be adjusted so as to be tightened by, but not carry the weight of the logs above them.

(10) A warning shall be given before throwing wrappers over the load and care shall be taken to avoid striking other persons with the wrapper.

(11) Wrappers and binders shall be placed and tightened around the completed load before the truck leaves the immediate loading area.

(12) While moving logs, poles, or log chunks within sorting or mill yards, that could roll or slide off the truck due to snow or ice conditions, or the logs or log chunks do not extend beyond the stakes, at least two wrappers and binders shall be used regardless of the height of the load.

(13) Wrapper chains or cables, binders, fasteners, or attachments thereof, used for any purpose as required by these standards, shall have a minimum breaking strength of not less than fifteen thousand pounds and shall be rigged so that it can be safely released.

Note: 3/8–inch hi–test steel chain, 7/16–inch improved plow steel wire rope of 6x19 or 6x37 construction, or materials having equivalent strength, when in compliance with the requirements herein contained, will be acceptable. (The diameter of the wire rope is immaterial as long as it meets the minimum breaking strength requirements.)

(14) A loaded logging truck required to have wrappers by this section, may be moved within the loading area without wrappers only if such movement does not present a hazard to workers.

(15) For the purposes of this standard, applied bundle straps or banding are not acceptable as wrappers and binders.

(16) All loose ends of wrapper chains or cables shall be securely fastened so as to prevent their swinging free in a manner that will create a hazard.

(17) Binders for securing wrappers on logging trucks shall be fitted with hooks of proper size and design for the wrapper chain being used.

(18) Wrappers shall be removed from service when any of the following conditions exist:

(a) Excessively worn links on chains;

(b) Deformed or stretched chain links;

(c) Cracked chain links;

(d) Frayed, stranded, knotted, or otherwise defective wire rope.

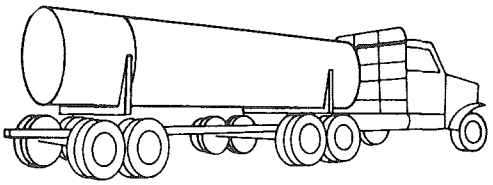
(19) Pipe extension handles (swedes) for tightening or securing binders shall be limited to not longer than thirty–six inches. Care shall be taken that a sufficient amount of the pipe extends over the binder handle.

(20) Defective binders shall be immediately removed from service.

Note: See Figures 9–A and 9–B for illustrations of placement and number of wrappers.

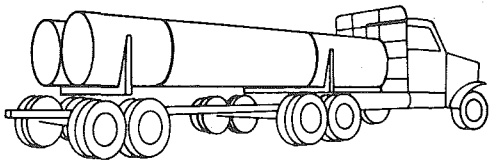
PLACEMENT AND NUMBER OF WRAPPERS

One Log Load



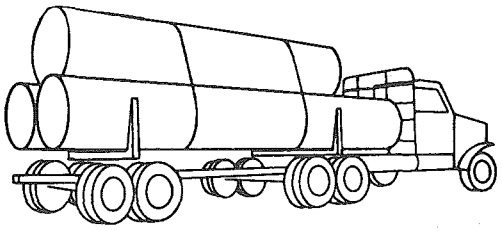
One wrapper required which shall be secured to the rear bunk. The log shall be blocked or secured in a manner to prevent it from rolling or shifting. An additional wrapper secured to the front bunk is optional.

Two Log Load



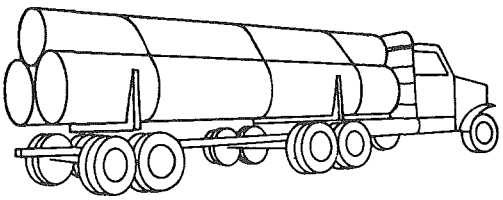
A minimum of two wrappers required. Logs shall be blocked to prevent them from rolling or shifting. If all logs are not contained by the stakes, additional wrappers required.

Three Or Four Log Load 44 Ft. Or Less



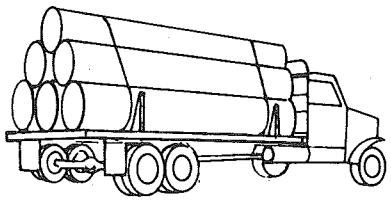
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Three Or Four Log Loads More Than 44 Feet



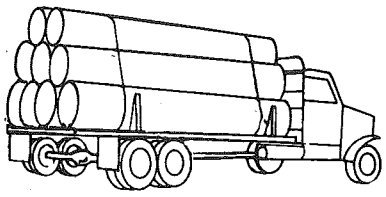
A minimum of three wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Five Or Six Log Load
All Logs 17 Feet Or Less



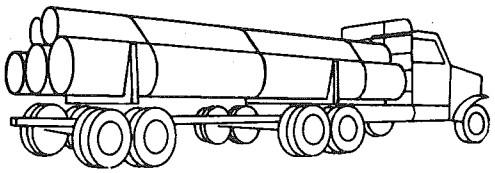
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Seven Or More Log Load
All Logs 17 Feet Or Less



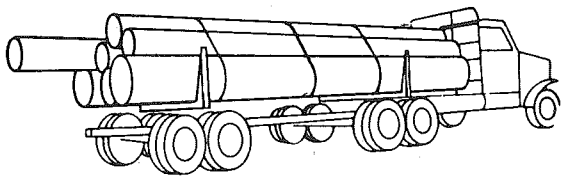
A minimum of two wrappers required. If all logs are not contained by the stakes, additional wrappers required.

Five Or More Log Load
If Any Logs Are More Than 17 Feet



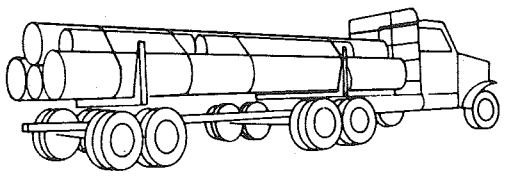
A minimum of three wrappers are required. If all logs are not contained by the stakes, additional wrappers required.

Proper Support For Logs



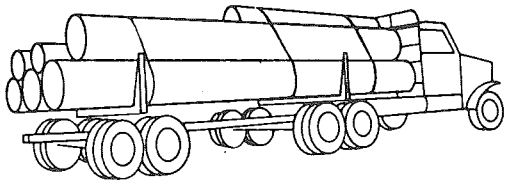
Not more than approximately one–third the weight of any log shall extend beyond the end of the logs or bunk supporting it.

Outside Logs Or Top Logs



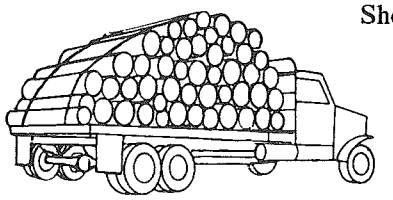
All outside (wing) or top logs shall be secured by a wrapper near but not within 12 inches of each end.

A Wrapper Shall Be Near Each Bunk



Each load shall be secured by having a wrapper within 6 feet of each bunk except on one log loads.

Short Logs Loaded Crosswise



A minimum of two wrappers are required and two chocks or stakes shall be used on the open end of the truck.

Note: All loads of logs on logging trucks equipped with chock blocks instead of stakes, shall have at least one additional wrapper over and above the requirements for trucks equipped with stakes, excepting on one and two log loads and trucks with short logs loaded crosswise.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-577, filed 9/21/79.]

WAC 296-54-579 Motor truck log transportation--Miscellaneous requirements. (1) No truck wheel shall have more than twenty-five percent of the lugs missing or defective.

(2) All truck wheels shall be maintained free of cracks, breaks, or defects.

(3) Windshields on all equipment shall be provided with windshield wipers in good working condition.

(4) Mule train trailers shall have a platform on the trailer tongue at least twelve inches by twenty-four inches made of nonslip material and capable of supporting at least three hundred pounds. The platform shall be of the self-cleaning type.

(5) Logs shall be loaded so that not more than approximately one-third of the weight of any log shall extend beyond the end of the logs or bunk supporting it.

(6) Trailer loading and unloading straps, links, or chains shall be fastened securely to the trailer frame and used in hoisting the trailer. The connections shall be maintained in good condition and shall not be attached to the trailer bunk. The use of molles for this purpose is prohibited.

(7) In unloading trailers from trucks, trailers shall be hoisted clear, the truck driven forward a safe distance, and the trailer lowered to within one foot of the roadway before persons approach the trailer or reach.

(8) Trailer hoisting or unloading straps shall be constructed and installed in a manner enabling the loading or unloading machine to engage the strap without manual personal contact.

(9) All motor vehicles shall be equipped with a horn that is audible above the surrounding noise level. The horn shall be sounded before operating the vehicle in reverse gear and sounded intermittently during the entire backing operation. The horn shall be maintained in an operative condition.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-579, filed 9/21/79.]

WAC 296-54-581 Motor truck log transportation--Steered trailers. Steered trailers, not controlled from the truck cab, shall be designed, constructed, and operated as follows:

(1) A secure seat with substantial foot rest shall be provided for the operator at the rear of the bunk. Any arrangement that permits the operator to ride in front of the bunk is prohibited unless a false bunk or other adequate protection is provided for the operator.

(2) The seat for the operator shall be so arranged that he has an unobstructed exit from both sides and the rear.

(3) The bunk support shall be so constructed that the operator has a clear view ahead at all times.

(4) Adequate means of communication shall be provided between the operator and the truck driver.

(5) Eye protection and respirator shall be provided for the operator.

(6) The trailer shall be equipped with fenders or splash plates to protect the operator from mud and dust so far as possible.

(7) If used during periods of reduced visibility on roads not under the control of the state department of transportation, counties, or cities, the trailer shall be equipped with head, tail, turn and stop lights.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-581, filed 9/21/79.]

WAC 296-54-583 Stationary log truck trailer loading. (1) All loading devices shall be designed, constructed, and maintained in such a manner as to have a five to one safety factor for its rated load capacity.

(2) Loaders shall be constructed of such height and width that they can be safely used to load the maximum-sized trailers they will be expected to handle without hanging up or striking the equipment.

(3) Electric-powered trailer loading devices shall be equipped with a switch or device which will govern the upper direction of travel of the load line to a safe limit.

(4) Electric motors used for hoisting purposes shall be equipped with approved overload switches or breakers.

(5) All electrical switch controls shall not exceed twenty-four volts. All control switches shall be of the momentary contact type which require continuous manual pressure for hoist to operate.

(6) Pendent-type control switches shall be suspended by a chain or other suitable device which will prevent placing a strain on the electrical cable.

(7) Pendents shall be so installed that when retracted the control switch shall not touch the ground.

(8) All electrical equipment shall be weatherproof-type or adequately protected from the weather, and shall meet or exceed the requirements of the National Electrical Code as promulgated by the director of the department of labor and industries pursuant to RCW 19.28.060.

(9) Trailer loaders, except A-frame type or bridge crane, shall be equipped with reach guides or devices which will keep reach in proper alignment. A tag rope or other safe guidance device shall be used to guide trailers being loaded by use of an A-frame type loader.

(10) Access roads and the area around the trailer loading devices shall be kept free of standing water and debris and maintained in good repair.

(11) The maximum capacity load to be lifted shall be posted in a conspicuous location where it can be easily seen by any person operating the hoist.

(12) Trailer loading equipment shall be periodically inspected at least every thirty days and shall be maintained in good repair. A written report shall be made and signed by the person making the inspection and kept on file by the company for twelve months.

(13) A lifting test shall be conducted annually on each loading device and a written record showing the date, name of person conducting the test, amount of weight lifted and results shall be kept in the office of the employer or at the site. The test weight shall be at least one hundred twenty-five percent of the maximum rated load but not more than one hundred thirty percent of the maximum rated load.

(14) Each drum shall be designed and arranged in such a manner that the line will maintain lead and spool evenly without chafing, crossing or kinking.

(15) A braking system shall be installed which shall have the capability of safely braking and holding one and one-half times weight of the full rated load.

(16) When trailers are to be loaded after dark, sufficient lights shall be provided for a safe operation.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-583, filed 9/21/79.]

WAC 296-54-585 Log unloading, booms, and rafting grounds--Storage and sorting areas--General requirements. (1) At no time shall one person be permitted to work alone.

(2) (a) Employees working on over or along water, where the danger of drowning exists, shall be provided with and shall wear approved personal flotation devices.

(b) Employees are not considered exposed to the danger of drowning when:

(i) The water depth is known to be less than chest deep on the exposed individual;

(ii) When working behind standard height and strength guardrails;

(iii) When working inside operating cabs or stations which eliminate the possibility of accidentally falling into the water;

(iv) When wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.

(c) Prior to and after each use, personal flotation devices shall be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices shall not be used.

(d) To meet the approved criteria required by subdivision (a), a personal flotation device shall be approved by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or their equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard table of devices equivalent to personal flotation devices). Ski belt or inflatable type personal flotation devices are specifically prohibited.

(3) In operations where regular logging machinery, rigging, etc., is used, the applicable sections of these rules shall apply.

(4) Artificial lights shall be provided and used where work is to be done between the hours of sunset and sunrise. Such lights shall be located in a manner that will be reasonably free of glare and provide uniform distribution of illumination and avoid sharply defined shadows.

(5) On all log dumps, adequate power for the method used for unloading shall be provided. All machines used for hoisting, reloading or lowering purposes shall be of approved design and sufficient power to control or hold the maximum load imposed in mid-air.

(6) Binders shall not be released from any load until an effective safeguard is provided.

(7) All mobile log handling machines shall be equipped with a means or mechanism which will prevent the logs from accidentally leaving the forks, and shall be used.

(8) The operator of the unloading machine shall have an unobstructed view of the unloading area or shall make certain no one is in the area where the logs are to be unloaded. Rearview mirrors shall be installed on mobile log handling equipment to assist the operator in ascertaining that the area behind the machine is clear before backing up.

(9) Unloading lines shall be so arranged that it is not necessary for the workman to attach them on the pond or dump side of the load.

(10) Life rings with a minimum of ninety feet of one-fourth-inch line with a minimum breaking strength of five hundred pounds attached, shall be provided at convenient points adjacent to water which is five feet or more in depth. Life rings shall be a minimum of thirty inches outside diameter and seventeen inches inside diameter and be maintained so as to retain a thirty-two pound positive buoyancy.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-585, filed 9/21/79.]

WAC 296-54-587 Water dumps. (1) All water dumps shall have brow logs except when logs are lifted from the load. If portable equipment is used, adequate stops shall be provided to prevent equipment from running off the dump.

(2) Where necessary for persons to walk alongside loads and equipment on trestles or fills, a minimum twenty-two inch wide walkway shall be provided, unless otherwise specified.

(3) All decks and plankways on log dumps must be kept in good repair and free from bark and other debris. Roadways shall not be inclined more than one inch to twelve inches across the driving surface.

(4) The use of small bridge-over logs, planking or timbers, between regular foot logs, or walkways, which will not support the weight of at least three persons are prohibited. All regular foot logs shall be barked on upper side.

(5) Electric powered hoists using hand-held cord remote controls in grounded locations, shall be actuated by circuits operating at no more than twenty-four volts. All control switches shall be of the momentary contact type which requires continuous manual pressure for the hoist to operate.

(6) Roadbeds at log dumps shall be hard packed gravel, heavy planking, or equivalent material, and shall be of sufficient width and even surface to insure safe operation of equipment.

(7) Where logs are unloaded on to rollways, sufficient space shall be provided between the top of the skids and the ground to clear the body of a person.

(8) When a brow log is used with a parbuckle system, all persons are prohibited from going between the brow log and the load of logs at any time.

(9) A positive safeguard shall be provided to prevent logs from leaving the loads on the side opposite the dump. Unloading lines, crotch lines or equally effective means shall be arranged and used in a manner to prevent any log from swinging or rolling back.

(10) All persons shall remain in the clear until all moving equipment has come to a complete stop.

(11) Logs shall not be unloaded by peaves or similar manual methods, unless means are provided and used that eliminate the danger from rolling or swinging logs.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-587, filed 9/21/79.]

WAC 296-54-589 Boom and rafting grounds. (1) Breaking of log jams by peavy method is prohibited, except in river drive or when jam occurs away from mechanical means or the dump.

(2) Wooden pike poles shall be of continuous, straight-grained No. 1 material. Defective poles, blunt or dull pikes shall not be used. Conductive pike poles shall not be used where there is a possibility of coming in contact with energized electrical conductors.

(3) Stiff booms shall be made by fastening not less than two boom sticks together. The width of a stiff boom shall be not less than thirty-six inches measured outside to outside of the logs. The boom sticks shall be fastened together with not less than 4" x 6" cross ties, or cable lashings notched into the boom sticks may be used when stiff booms are exposed to heavy swells. Stiff booms shall be kept free of loose bark and shall be maintained in good repair.

(4) A walkway thirty-six inches wide with standard hand railing shall be provided from the shore end of stiff boom to shore.

(5) All sorting gaps shall have a substantial stiff boom on each side of gaps. Such stiff booms or walkways shall be planked over.

(6)(a) Boom sticks shall be reasonably straight with no protruding knots or loose bark. They shall be capable of supporting above the water line at either end the weight of one worker and equipment or two hundred fifty pounds.

(b) Foot logs shall be reasonably straight with no protruding knots or loose bark and shall be of sufficient size to support above the water line at either end the weight of two workers and equipment or five hundred pounds.

(7) Boom sticks which have been condemned as unsafe shall be marked by three chopped crosses ten feet from the butt end, and such sticks shall not be used as boom sticks.

(8) Gaps between boom sticks shall not exceed twenty-four inches. All wire shall be removed from boom sticks and boom chains before they are re-used or hung in rafting stalls.

(9) When permanent cable swifters are used they shall be arranged so that they are within easy reach of rafter without rolling boom sticks on which they are fastened. When cables become hazardous to use because of jaggers, they shall be discarded.

(10) When floating donkeys or other power-driven machinery is used on boom, it shall be placed on a raft or float with enough buoyancy to keep the deck of such raft or float well above water. Wherever persons walk, the deck of the raft or float shall be planked over with not less than two inch planking, and kept in good repair.

(11) When doglines used in rafting, brailing or stowing logs become hazardous to use because of jaggers, they shall be discarded.

(12) Storing, sorting or any boom work, other than boom boat operations, shall require a minimum of two persons.

(13) Sufficient walkways and floats shall be installed and securely anchored, to provide safe passage for workers.

(14) Walkways alongside sorting gaps shall not be less than four feet wide. Other walkways shall be not less than twenty-two inches wide.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-589, filed 9/21/79.]

WAC 296-54-591 Boats and mechanical devices on waters. (1) Prior to starting the boat motor, any spilled fuel shall be removed and vapors shall be exhausted from any area in which they may accumulate.

(2) The bilge area shall be kept clean and oil, grease, fuel, or highly combustible materials shall not be allowed to accumulate.

(3) Adequate ventilation equipment shall be provided and used for the bilge area to prevent the accumulation of toxic or explosive gases or vapors.

(4) Adequate ventilation equipment shall be provided and used for the cabin area on enclosed-cabin type boats to prevent an accumulation of harmful gases or vapors.

(5) Deck and cabin lighting shall be provided and used where necessary to provide safe levels of illumination aboard boats. Boats operated during the period from sunset to sunrise, or in conditions of restricted visibility, shall display navigation lights as required by the United States Coast Guard. Searchlights or floodlights shall be provided to facilitate safe navigation and to illuminate working or boarding areas adjacent to the craft.

(6) On craft used by workers wearing calked shoes, all areas where the operator or workers must stand or walk shall be made of or be covered with wood or other suitable matting or nonslip material and such covering shall be maintained in good condition.

(7) Each boat shall be provided with a fire extinguisher and life ring with at least fifty feet of one-fourth inch line attached. On log broncs, boomscooters, or other small boomboats where all occupants are required to wear life saving devices and a life ring would present a tripping hazard, the life ring may be omitted.

(8)(a) Along docks, walkways, or other fixed installations on or adjacent to open water more than five feet deep, approved life rings with at least ninety feet of one-fourth inch line attached, shall be provided. The life rings shall be spaced at intervals not to exceed two hundred feet and shall be kept in easily visible and readily accessible locations.

(b) When employees are assigned work at other casual locations where exposure to drowning exists, at least one approved life ring with at least ninety feet of line attached, shall be provided in the immediate vicinity of the work assigned.

(c) Where work is assigned over water where the vertical drop from an accidental fall would exceed fifty feet, special arrangements shall be made with and approved by the department of labor and industries prior to such assignment.

(d) Lines attached to life rings on fixed installations shall be at least ninety feet in length, at least one-fourth-inch in diameter, and have a minimum breaking strength of five hundred pounds. Similar lines attached to life rings on boats shall be at least fifty feet in length.

(e) Life rings must be United States Coast Guard approved thirty-inch size.

(f) Life rings and attached lines shall be maintained to retain at least seventy-five percent of their designed buoyancy and strength.

(9) Log broncs, boomscooters, and boomboats shall not be loaded with personnel or equipment so as to adversely affect their stability or seaworthiness.

(10) Boats shall not be operated at an excessive speed or handled recklessly.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-591, filed 9/21/79.]

WAC 296-54-593 Dry land sorting and storage. (1) Unauthorized foot and vehicle traffic shall not be permitted in the sorting or storage area.

(2) Logs shall be stored in a safe and orderly manner. Roadways and traffic lanes shall be kept clear of protruding ends of logs and debris.

(3) Dry deck log storage areas shall be kept orderly and maintained in a condition conducive to safe operation of mobile equipment. Roadways and walkways shall have a smooth hard-packed surface wide enough to permit a safe operation. Bark, mud, and other debris shall not be allowed to accumulate to the extent it constitutes a hazard to the operation.

(4) At log dumps, sorting and storage areas, an effective means shall be provided and used to control dust.

(5) Only an authorized person shall operate or ride any lift truck, log stacker, or log unloader.

(6) Signaling log unloader operators at dry deck areas by throwing bark or chips in the air is prohibited. Hand, horn signals or other safe, effective means shall be used at all times.

(7) Unnecessary talking to operator while engaged in operating controls of log stacker or log unloader is forbidden.

(8) Lift forks and arms of unloading machines shall be lowered to their lowest position, and all equipment brakes set prior to the operator leaving his machine unattended.

(9) Log unloaders or stackers shall not be moved about the premises for distances greater than absolutely necessary with the lift extended above the drivers head or with loads lifted higher than is necessary for vision.

(10) When truck drivers are out of the cab, they shall be in the clear, and in view of the log unloader before the lift forks are moved under the load and the lift is made.

(11) Where logs are offloaded onto a dry deck by means of unloading lines, a mechanism shall be used which is self-releasing. Employees shall be prohibited from ascending dry decks to release unloading lines.

(12) Persons shall not position themselves in the hazardous area near or under loads of logs being lifted, moved or suspended.

(13) Jackets or vests of fluorescent or other high visibility material shall be worn by persons working on dry land log storages. Hard hats shall be of a contrasting color or shall have high visibility tape affixed thereon.

(14) Log unloaders and log stackers designed in a manner whereby logs being handled may jeopardize the safety of the operator shall be provided with overhead protection and any other safeguards needed to afford adequate protection.

(15) Log unloaders and log stackers shall be equipped with a horn or other audible warning device. If vision is impaired or restricted to the rear, the warning device shall be sounded before operating the vehicle in reverse

gear and sounded intermittently during the entire backing operation. The warning device shall be maintained in an operative condition.

(16) Each log-handling machine shall be equipped with a braking system which is capable of stopping and holding the machine with maximum load on any grade on which it may be required to work.

(17) A limit stop, which will prevent the lift arms from over-traveling, shall be installed on electric powered log unloaders.

(18) Shear guards shall be installed on unloading machines and similar types of equipment on which the arms pivot and move alongside the operator creating a pinch point at that location.

(19) All forklift type machines shall be equipped with grapple arms and the arms shall be used whenever logs are being moved.

(20) When log trucks are loaded by the use of a log stacker and the lay of any log is higher than the stakes, the log stacker shall remain against the completed load, or other suitable protection provided, to prevent the logs from falling until at least two wrappers and binders have been applied.

(21) All binders and wrappers shall remain on the load until an approved safeguard has been provided to prevent logs from rolling off the side of the truck or trailer when binders are released. A shear log, or equivalent means, shall be provided to ensure the log truck will be stationed close enough to the wrapper rack so that a log cannot fall between the log truck and the wrapper rack when removing binders and wrappers. At least one binder shall remain secured while relocating or tightening other binders. Crotch lines, forklifts, log stackers, log unloaders, or other effective means shall be used for this purpose.

(22) An extra wrapper or metal band of equal strength shall be placed to hold the logs when it is necessary to remove a wrapper to prevent it from being fouled by the unloading machine.

(23) Machines of the type having arms which block the regular exit when in the up position, shall have an emergency exit installed.

(24) Seat provided. Riding on any part of a log handling machine except under the canopy guard is prohibited.

(25) Identification tags shall not be applied or pulled unless logs are resting in a stationary place, such as bunks, cradles, skids, or sorting tables.

(26) No person shall approach the immediate vicinity of a forklift-type log handling machine without first notifying the operator of his intention and receiving an acknowledgement from the operator.

(27) When forklift-type machines are used to load, unload, or handle trailers, a positive means of holding the lifting attachment to the fork shall be installed and used.

(28) When dry land log dumps use unloading methods similar to those of water dumps, the safety standards for water dumps shall apply to dry land dumps.

(29) When logs are handled between the hours of sunset and sunrise or other periods of poor visibility, illumination shall be provided consistent with chapter 296-62 WAC, general occupational health standards, pertaining to illumination.

(30) Air operated stake releases shall be in conformity with the following requirements:

(a) The air supply shall be taken from the "wet" air reservoir or from the accessory air line to a spring loaded, normally closed control valve.

(b) The control valve shall be located in the cab, positioned so that it is accessible only from the operator's position.

(c) The control valve shall be fitted with a spring loaded cover or be otherwise guarded against inadvertent operation.

(d) A separate air line shall extend from the control valve to the tractor and trailer stake release chambers. The air line shall be clearly identified or installed in such a manner as to preclude it from being mistaken for the service or emergency air line.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-593, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-593, filed 9/21/79.]

WAC 296-54-595 Railroad operations. (1) All persons employed in any service on trains or rail operations, which are not engaged in interstate commerce, are subject to and shall be conversant with all rules and special instructions.

(2) Employees must render every assistance in their power in carrying out these rules and special instructions and must report to the proper official any violation thereof.

(3) Accidents, detention of trains or speeders, failure in supply of fuel or water, defects in track, bridges, or signals, must be properly reported to the supervisor by the quickest possible method.

(4) Any logging railroad may maintain a special set of operating rules applicable to their operation, provided that said rules are acceptable to the division of industrial safety and health, department of labor and industries.

(5) Each logging railroad operation which has more than one piece of railroad equipment in operation, must have a dispatcher on duty. All equipment must receive clearance from dispatcher.

(6) Train crew size shall be dependent upon the number of persons needed to safely operate the train under all prevailing conditions; however, when necessary to set hand brakes, two or more persons shall be assigned to set the brakes and give signals.

(7) All locomotives shall be equipped with sanding devices for both rails, front and rear, in proper working order. Clean, dry sand should be used.

(8) Locomotives shall be equipped with power brakes (air or steam) on all driving wheels. Tenders also shall have power brakes.

(9) All locomotives and speeders, operating between sunset and sunrise or other periods of reduced visibility, shall be equipped with and use head lights which shine

in the direction of travel. The lights shall be of sufficient candlepower so the train can be stopped within range of the light beam. Cab lights shall be provided and maintained so the operators can see from their required positions the gauges and equipment necessary for operation.

(10) All locomotives shall be equipped with proper grab irons, hand holds, steps, and running boards.

(11) All locomotives shall be equipped with automatic couplers, suitable for low or high draw-bars.

(12) On all rolling stock, wheels which have sharp or badly worn flanges, shall be replaced. Avoid the use of flat wheels.

(13) All locomotives with tender shall have an apron of proper length and width to insure safety and which shall be roughened to insure secure footing.

(14) Handholds and footboards shall be provided on locomotive cranes, except where cab overhangs end of car.

(15) Trains and speeders shall not exceed a safe speed.

(16) A terminal test of air brakes shall be made by trainmen before leaving the terminal. Enginemen shall not proceed until they are satisfied by brake action that brakes are able to control the train.

(17) All of the cars in a train shall have their brakes in good operating condition.

(18) On railroads where joint operations of two or more firms are necessary, trains shall not be dispatched less than fifteen minutes apart. Red lights shall be displayed on the rear of such trains at night or when visibility is poor.

(19) Whenever cars are left on grades, derailers shall be provided. Derail signs shall be placed near derailers. In setting out equipment, care shall be used in seeing that proper clearance is provided.

(20) Standard pressure for mountain grades requires a pressure of ninety pounds in train pipe, one hundred ten pounds in main reservoirs (low pressure) and one hundred thirty pounds in high pressure to insure quick releasing of brakes and recharging of auxiliaries. Engineer shall see that his engine carries these pressures and that sanders, both forward and rear, are in working order. On all heavy grades the high pressure retaining valve must be used and before train is started from landing, a test of brakes must be made and piston travel adjusted, if necessary, and retaining valves put up. Engineer shall start train away from landing slowly, giving wheels a chance to roll before applying brakes and, to avoid skidding of wheels, using sand freely. Brakes should then be applied immediately and released, allowing the retaining valves to hold the train while train pipe and auxiliaries are being recharged. Train speed should be held to the required rate by setting and releasing brakes as it is necessary to control train.

(21) When it is necessary to leave loads on pass while switching a side, loads must be left close to derailer, air set and sufficient hand brakes set up, before cutting engine from train.

(22) Enginemen must see car or signalman when making couplings, giving trainmen ample time to align drawheads and open knuckles of coupler, especially on curves, except when using radios.

(23) Drawbars should not be aligned with the foot while cars or engines are in motion. Trainmen shall not climb between cars while in motion. Enginemen shall not drift too close to switches which are to be thrown. Position of switch points should always be observed after throwing switch. Switch lever should be pushed firmly into the notch before leaving the switch. No persons except trainmen, unless authorized, shall ride on engine foot-boards. No object shall be thrown from train or engine while in motion. Bell shall be rung or whistle blown, before moving locomotive.

(24) No equipment shall be pushed ahead of locomotive unless a brakeman is on head car in constant view of engineer or second brakeman in position to intercept and pass signal to engineer.

(25) In addition to air brakes, hand brakes must be provided on all cars and maintained in good working order.

(26) Hand brakes must be easily accessible to brakemen when cars are loaded. When wheels or staff brakes are used they should be placed on the side opposite the brow log at the dump to prevent their damage when cars are unloaded. All switch throws, walkways and cleared areas for brakemen shall be on the hand brake side.

(27) All brake hickeys shall be made from three-fourths inch hexagon steel (high grade) and be twenty-four inches with a good claw on one end to fit the wheel and a knob on opposite end to prevent slipping from brakeman's hand.

(28) All railroad trucks and cars, where brakes are set by hand while in motion, shall have good footboards and toeboards on the brake end.

(29) A ten inch bunk block is recommended on all trucks to prevent logs from slipping over block.

(30) All cars other than logging trucks must have hand hold and foot steps to permit persons to get on and off easily and safely.

(31) All cars and trucks regularly operated must have automatic couplers.

(32) Locomotives and cabooses shall carry the following equipment:

1 red light (lantern type)
3 red flags
At least 3 fuses

(33) When a train stops between telephones, or where the rear of a train extends beyond yard limits, the rear of the train must be properly protected.

(34) Whistle sign board shall be placed one thousand two hundred feet from each side of highway crossings.

(35) A rail clamp shall be placed to hold cars left on a grade on main line or spurs.

(36) All cars and trucks shall be legibly numbered so that those with defects may be reported and taken out of service. Each locomotive, speeder, or other self-propelled vehicles shall be numbered, or otherwise made readily identifiable.

(37) All cars used for hauling logs shall be equipped with patent stake bunks, or bunks with chock blocks and/or chains, so constructed that block can be released from opposite end of bunk unless solid stakes are used.

(38) All main line trains of more than ten loaded cars shall have a caboose at the rear of the train.

(39) All operations having both truck roads and railroads, shall post signs at intersections same as public crossings.

Engine whistle signals. The following engine whistle signals are established as standard and are taken from the American Association of Railroads. The signals prescribed are illustrated by "o" for short sounds and "–" for long sounds. Audible whistle shall be sounded when approaching camps, junctions, grade crossings and other prescribed places in conformity with the American Association of Railroads:

One short	(o) Stop, apply brakes.
Two long	(––) Release brakes.
Three long	(–––) When running, train parted, to be repeated until answered by hand signal.
Two short	(oo) Answer to any signals not otherwise provided for.
Three short	(ooo) When train is standing back.
Four short	(oooo) Call for signals.
Two long, two short	(––oo) Approaching highway crossing at grade.
One long	(–) Approaching station, rollway, chute, crossing, junctions, and derailers. When standing, air leak.
Six long	(––––––) Repeated at intervals, call for section men, train derailed.
One long, three short	(–ooo) Flagman to go back and protect rear of train.
Four long	(––––) Foreman.
Five long	(–––––) Flagman to return from any direction.
Long, short	(–o–o–o) Repeated four or more times, fire alarm.
Seven long, two short	(–––––––oo) Repeated, man hurt.
One long, one short	(–o) Repeated at intervals, closing down.
Groups of shorts repeated	(ooooooo) Danger of runaway.

Unnecessary use of whistle is prohibited.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-595, filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-595, filed 9/21/79.]

WAC 296-54-597 Railroad maintenance--Loading or unloading. (1) Track gangs, bridge crews, etc., when working on railroads in use shall place a yellow caution flag by day and a yellow lantern by night a sufficient distance both directions from the crew to protect them against approaching equipment. The operator of said equipment shall acknowledge the signal by two short blasts of the whistle or horn and proceed with caution.

When said crews are removing or replacing a rail or are performing any other work that would make it necessary for approaching equipment to come to a stop, they shall place a red flag by day and a red lantern by night in the center of the track a sufficient distance in both directions from the crew to protect them against said equipment. The operator of approaching equipment shall acknowledge the signal by one short blast of the whistle or horn and shall come to a dead stop and remain standing until the signal is removed by the person who placed it, or until investigation proves that the track is safe for passage. If a flagman is used, the above provision need not apply.

(2) Where clearance is scant, warning signs or signals shall be posted.

(3) Switch throws should be kept well oiled and targets and signs in good legible condition.

(4) Standard clearances shall be maintained at all points on the right of way except where necessarily restricted where loading or unloading operations are performed or at water tanks, fuel tanks, etc. Warning signs shall be posted at all such locations.

(5) Whenever workmen are repairing, working on or in railroad equipment, loading or unloading cars or performing other duties where there is danger of the railroad equipment being struck by other moving railroad equipment; proper means, methods or safeguards shall be used to protect such workmen. A derail shall be used to prevent other rail equipment from contacting such cars or equipment or endangering the workmen. After cars are spotted, blue flags shall be placed in the center of the tracks at least fifty feet from the end car during the day and blue lights shall be installed at such locations at night. Flags, lanterns and derails shall be removed only by the person placing them unless they are to remain posted for a longer period of time, in which case one person on each oncoming shift shall be responsible to ascertain that they are in place and he shall not remove such safeguards until he investigates to make certain all persons are in the clear. Operators of approaching equipment shall not pass or remove a flag or lantern which is properly posted. Cars or other equipment shall not be placed where it will obscure the signal from an operator controlling approaching equipment.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-597, filed 9/21/79.]

WAC 296-54-599 Truck and equipment maintenance shops. It is recognized that the usual hazards encountered in maintenance shops performing work on logging and related equipment would be very similar to those found in general repair, machine or welding shops; therefore, the rules contained in the general safety and health standards and other applicable safety standards promulgated and administered by the department of labor and industries shall apply to such places of work.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-599, filed 9/21/79.]

WAC 296-54-601 Signals and signal systems. (1) Standard hand or whistle signals as described or illustrated herein, shall be used for the movement of rigging, logs, or equipment when using a high lead, slackline, or cable skidder system for yarding. For hand signal illustrations, see Figure 4.

(2) Voice communications may be used for yarding under the following conditions:

(a) Voice communications by use of radio frequencies may be used to transmit instructions and directions to the yarder operator when using a grapple type logging system, providing no person is in a hazardous area near live rigging.

(b) Voice communication may be used to instruct the yarder operator when picking up an occasional log with the use of a choker on a grapple system, providing the grapple is on the ground prior to the setting of the choker and that no lines are moved by the operator until the person setting the choker has returned to a safe location away from any running lines. At no time shall chokers be used on the grapple system during the hours of darkness or during periods of reduced visibility to such extent that the yarder operator cannot clearly see the workmen setting the choker. When a number of logs are required to be yarded by using chokers instead of the grapple, the requirements specified for high lead type of logging shall apply.

(c) Voice communications by use of radio frequencies may be used to transmit instructions and directions to the yarder operator when using a balloon system for yarding. The person operating the radio shall ascertain that all crew members are in the clear before transmitting instructions which would cause any line or turn to move. The person giving such instructions shall keep the crew members informed as to which movements will commence. The whistle shall be blown before moving any running line.

(d) The Federal Communications Commission rules require that assigned call letters be used in conjunction with voice communications.

(3) Voice communications on the same radio frequencies used to transmit skyline, highlead, slackline, or skidder whistle signals (154.57 and 154.60 MHz channels), shall be prohibited.

Note: If voice is received on 154.57 or 154.60 MHz channels, it is recommended the Assistant Director, Department of Labor and Industries, Division of Industrial Safety and Health, P.O. Box 207, Olympia, Washington 98504, (Phone 206/753-6500) be contacted as soon as possible to enable the department to ascertain the source of the voice transmission.

(4) If a standard signal is not listed for an unusual or new situation, a hand or whistle signal other than any listed for the type of yarding being done may be used for the specific situation only. Any special signals so developed shall be understood by all persons required to work in the area which may be affected by their use.

(5) A copy of the standard hand and whistle signals shall be posted on the yarder and at places where crews congregate. For tractor logging operations, hand signals shall be posted at places frequented by the crew members such as in crew buses, etc.

(6) Only one workman in any crew shall give signals at the point where chokers are being set. Any person is authorized to give a stop signal when a workman is in danger or other emergency condition is apparent.

(7) Hand signals are permitted only when the signal person is in plain sight of the machine operator and when visibility is such that the signals are discernible. Hand signals may be used at any time as an emergency stop signal.

(8) Throwing of any type of material as a signal is prohibited.

(9) The use of a jerk wire signal system for any type of yarding operation is prohibited.

(10) All persons shall be in the clear before any signal is given to move the rigging, logs, or turns, and movement of rigging, logs, or turns shall not commence until after the proper signals have been given.

(11) Machine operators shall not move any line unless the signal received is clear and distinct. If in doubt, the operator shall repeat the signal as understood and wait for confirmation.

(12) A horn or whistle which is automatically activated by the radio or electric signaling system shall be used on each yarder used for skyline, high lead, skidder or slackline system of yarding, except where hand signals are permissible. The horn or whistle shall emit a sound which will be clearly audible to all persons in the affected area. Such a horn or whistle shall also be required on combination yarding and loading machines and tree pullers. Audible signals are not necessary on grapple or other yarding systems where persons are not exposed to the movement of logs or rigging.

(13) Each unit of the signal or control system in use, shall be tested daily before operations begin. Audible signals used for test purposes shall not include signals used for the movement of lines or materials.

(14) Citizen band (CB) radios shall not be used to activate any signal, machine, or process, either automatically or by voice. This shall not prohibit the use of CB radios for communication between sides, vehicles, work units, or for emergency situations.

(15) When audible whistle signals are being used simultaneously by yarding and loading machines at a landing, signal whistle or horn tones used in connection with machine movements shall be so differentiated as to distinctively identify any intended work movement of either machine.

[Statutory Authority: RCW 49.17.040, 49.17.050, 49.17.240, chapters 43.22 and 42.30 RCW. 80-11-057 (Order 80-15), § 296-54-601,

filed 8/20/80. Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-601, filed 9/21/79.]

WAC 296-54-603 Electric signal systems. (1) Where an electrical signal system is used, all wire and attachments shall be of the weatherproof type and all connections shall be weatherproof.

(2) Electric signal systems shall be properly installed and adjusted. They shall be protected against accidental signaling and shall be maintained in good operating condition at all times. Sufficient signal wire shall be provided to enable good voice contact between the whistle punk and rigging crew at all times.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-603, filed 9/21/79.]

WAC 296-54-605 Radio systems used for voice communication, activation of audible signals, or equipment. (1) Every employer who uses a radio signaling or control system (voice or functions) shall comply with or exceed the minimum requirements specified in this section.

(2) A valid operating permit shall be obtained by the owner from the division of industrial safety and health, department of labor and industries, prior to putting into use any radio signaling or control system (voice or functions) intended to be used in conjunction with any type of cable logging operation. Permits will be issued only for systems licensed for such use and using those carrier frequencies as authorized by the Federal Communications Commission. In addition, permits will be granted only when tone or function frequencies are compatible with other radio systems in use and when in compliance with all other applicable requirements contained in this safety standard.

(3) The division of industrial safety and health reserves the right to designate the use of radio frequencies for certain purposes or functions, for example, certain frequencies may be used for voice transmission of instruction, others for tone coded functions, or activation of signaling devices. No single tone sets shall be permitted for logging purposes. The division may also designate which tone frequencies may be used for the activation of a signaling device or for control of equipment on certain federal communication assigned carrier frequencies.

(4) A list of tone frequencies which may be used with any Federal Communications Commission assigned carrier frequencies will be made available by the division of industrial safety and health to any interested person, firm, or corporation upon request.

(5) The division of industrial safety and health shall assign the area or areas in which a radio signaling system may be used and shall so mark on the permit. Radio signaling systems shall not be used in any area other than indicated on the permit. (See Figure 16 for map of areas.)

(6) The person or firm name on the permit shall be the same as the person or firm operating the radio signaling system except for loaner or rental sets. A person or firm using a loaner or rental set shall be responsible for the radio signal system as if they were the owner of the set. The application for a permit to use a radio signaling system shall contain the following information:

(a) Name and address of applicant.

(b) The radio frequencies of the radio signaling device in MHz.

(c) The tone frequency or frequencies of the radio signaling system used to activate a horn, whistle, or control equipment in Hz. The security gate, or pulse tone, shall be shown first.

(d) The name of the manufacturer of the radio signaling system.

(e) The serial number of the receiving unit.

(f) The state assigned area or location in which the unit will operate.

(g) Indicate type of signaling used.

(h) From whom the system was purchased or acquired, and the date of acquisition of the system.

(i) Intended use and function of system.

Note: See sample Form No. 157, "application for permit to operate radio signal system in designated area," Figure 10 following this section.

(7) The permit granted by the department shall be attached to the case of the receiver of the radio signaling system for which it is granted.

Note: See sample S.F. Form No. 158, "permit to operate multi-tone radio signal system in designated area," Figure 11 following this section.

(8) Each radio receiver shall have its radio carrier frequency in MHz and tone frequency(s) in Hz indicated on the outside case of the receiver. The manufacturer's name and serial number shall also be permanently indicated on the outside of the case. When the duration or width of the tone frequencies performs a function, the one duration/width shall also be permanently indicated on the outside of the receiver case. Each transmitter shall be identified with its receiver. Two or more receivers in operation simultaneously on the same tone frequency shall be prohibited.

(9) It shall be the responsibility of the owner of any radio signaling system to notify the division of industrial safety and health, department of labor and industries, immediately, if the signal system is:

(a) Permanently retired (in what manner and date retired).

(b) Sold (submit name and address of purchaser and date sold).

(c) Removed from the state (name of state to which moved and date moved).

(d) Stolen (date).

(10) Two operable transmitters shall be carried by separate individuals at the point where chokers are being set at all times when transmitters are being used for tone signaling by persons around the live rigging in the choker setting area. Only one radio transmitter shall be required if in the possession of a signalperson who has no other duties and remains in an area where there are no hazards created by the moving rigging or logs. If the total crew consists of a yarder operator and one person in the rigging, only one transmitter is required provided

a positive system is instituted and used to check on the well–being of the person in the rigging.

(11) When interference, overlap, fadeout, or blackout of radio signals is encountered, the use of the device shall be discontinued immediately. The use of the device shall not be resumed until the source of trouble has been detected and corrected.

(12) All radio signaling systems put into use for the first time after the effective date of these safety standards, shall meet or exceed the minimum performance specifications contained in WAC 296–54–607 of these safety standards, and, when altered or repaired, shall continue to meet such specifications.

(13) At least one make and model of each signaling system shall be tested and certified that it meets or exceeds the minimum requirements for performance as specified in WAC 296–54–607. A copy of such performance report shall be signed by the person or persons who tested the unit or components and shall be sent to the Division of Industrial Safety and Health, Department of Labor and Industries, P.O. Box 207, Olympia, Washington 98504.

(14) Radio equipment shall not be used without displaying a permit as required by this standard. The permit shall be prominently displayed on the outside case of the receiver of the unit or, for radio controlled carriages, on the transmitter in the yarder.

(15) Adjustments, repairs, or alterations of radio signaling devices shall be done only by or under the immediate supervision and responsibility of a person holding a first–class or second–class commercial radio operator's license, either radio–telephone or radio–telegraph, issued by the Federal Communications Commission. Persons who do not possess the technical ability or do not have the proper equipment to cause the signaling systems to function within required tolerances shall not attempt to repair, alter, or adjust such systems.

(16) Radio frequencies assigned to systems for which voice communications may be used to give signals to the yarder operator, shall not be the same frequencies as those assigned for whistle signals used in skyline, highlead, slackline, or cable skidder systems.

(17) When hazardous interference is created by moving a voice communication system into an area where a system is already in use on the same frequency, use of the newly–moved system shall be immediately discontinued until the problem of interference has been corrected.

(18) Before moving any unit from one assigned geographical area to another (see area map, Figure 12 following this section), a new permit shall be applied for and secured from the Division of Industrial Safety and Health, Department of Labor and Industries, P.O. Box 207, Olympia, Washington 98504.

Form No. 157. 5-71

STATE OF WASHINGTON

DEPARTMENT OF LABOR AND INDUSTRIES DIVISION OF SAFETY

APPLICATION FOR PERMIT TO OPERATE RADIO SIGNAL SYSTEM IN DESIGNATED AREA

Radio Carrier Frequency..... Serial No.....

Tone Coding Frequency.....Hz.....Name of Manufacturer of Signal System.....

Firm Name..... Address..... By.....

Intended Function of Unit: Voice communication ☐ Whistle signal ☐ Control Equipment ☐

Area in which Unit will be Operated:..... 1 ☐ ..... 2 ☐ ..... 3 ☐ .....
(Area map included in Safety Standards for Logging Operations)

Type of Tone: Sequential ☐ Simultaneous ☐ If other specify type.....

System to be Used For: Grapple ☐ Skyline, Highlead, Slackline, Skidder ☐ Balloon ☐

System Purchased or Acquired From.....

Date System Purchased or Acquired: Day..... Month..... Year.....

Mail Permit to.....

Date Application Mailed to Division of Safety ...../...../.....
Day Mo. Year

Date Permit Issued ...../...../.....
Day Mo. Year
DIV. OF SAFETY USE ONLY

3

Figure No. 10

STATE OF WASHINGTON
DEPT. OF LABOR & INDUSTRIES DIV. OF SAFETY

PERMIT #

TO OPERATE MULTI-TONE RADIO SIGNAL SYSTEM IN DESIGNATED AREA.

Model ..... Serial .....

Carrier Frequency ..... MHz

Tones ..... Hz

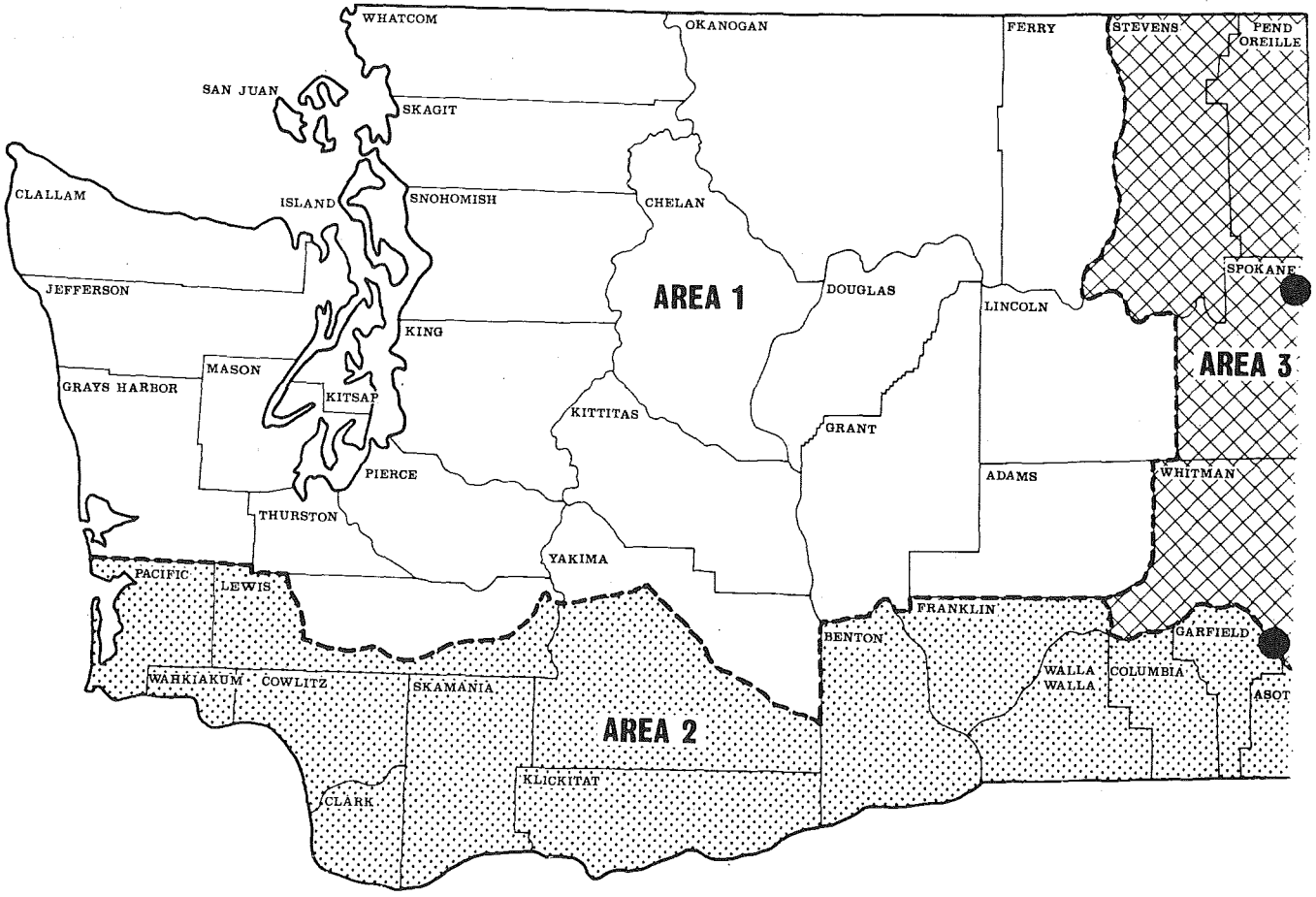
AREA

Firm Name .....

Issued by .....

S. F. No. 158—12-71—25C. 38416.

AREAS FOR USE OF RADIO SIGNALING SYSTEMS FOR LOGGING OPERATIONS



State of Washington
Department of Labor and Industries
Division of Industrial Safety and Health

A permit issued by the division of industrial safety and health shall be attached to the outside of the receiver which shall indicate the area in which the radio signaling equipment may by used.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-605, filed 9/21/79.]

WAC 296-54-607 Radio signal systems--Specifications and test procedures. All radio-signaling systems put into use for the first time after the effective date of these rules shall meet or exceed the following requirements, specifications, tolerance, and tests and such systems, when altered or repaired, shall meet the same minimum requirements.

(1) Radio-signaling systems used to transmit whistle signals or control functions of equipment associated with skyline, highlead, slackline, or cable skidder systems of logging shall transmit and decode only by the use of authorized multi-tone frequencies. Only sequential tones may be used to transmit signals or control equipment when utilizing carrier frequencies of 154.57 or 154.60 MHz.

(2) The receiver sensitivity shall be capable of attaining .6 microvolt, or greater, for 12 db SINAD ratio for VHF frequencies and .7 microvolt, or greater, for UHF frequencies. Effective January 1, 1984, all radio systems receiver sensitivity shall be capable of attaining .4 microvolt, or greater, for 12 db SINAD ratio for VHF frequencies and .5 microvolt, or greater, for UHF frequencies. When interference is a factor, the receiver may be desensitized in the furtherance of safety by a person qualified in accordance with WAC 296-54-605(15).

(3) The receiver spurious attenuation shall be at least 40 db when measured by the 20 db quieting method. On all new radio systems put into service after the effective date of these standards, the receiver spurious attenuation shall be at least 60 db when measured by the 20 db quieting method. Effective January 1, 1984, all new radio signal systems shall be required to have receiver spurious attenuation of at least 70 db when measured by the 20 db quieting method and shall have image response attenuation of 60 db when measured by the 20 db quieting method. Effective January 1, 1989, all radio signal systems shall be required to have receiver spurious attenuation of at least 70 db when measured by the 20 db quieting method and image response attenuation of 60 db when measured by the 20 db quieting method.

Note: Spurious response attenuation is a measure of the receiver's ability to discriminate between a desired signal to which it is resonant and an undesired signal at any other frequency to which it is also responsive.

(4) The receiver selectivity shall be more than 40 db plus or minus 30 KHz. All new radio signal systems put into service after the effective date of these standards, the receiver selectivity shall be at least 60 db plus or minus 30 KHz. Effective January 1, 1984, all new radio signal systems purchased and used shall have receiver selectivity of at least 80 db plus or minus 30 KHz. Effective January 1, 1989, all radio signal systems shall have receiver selectivity of at least 80 db plus or minus 30 KHz, when measured by the E.*I.A. SINAD method.

(5) The receiver-decoder tone frequency stability shall not exceed .006 (.6%) above or below the assigned tone frequency.

(6) The drift of a transmitter-encoder tone shall not exceed .006 (.6%) above or below the assigned tone frequency.

(7) Parts of the radio-signaling system affected by moisture, which may be subjected to the entrance of moisture during use, shall be weatherproofed. Transmitters shall be tested within fifteen minutes after being subjected to the following conditions and shall have the ability to continue functioning properly. The transmitter and receiver shall be placed in a humidity chamber for eight hours where the humidity has been maintained at not less than ninety percent and where a 40°C. temperature has been maintained.

(8) Radio-signaling system units shall operate within tolerances specified at any temperature within the range of -30°C. to +60°C.

(9) Switches of transmitters used to send whistle signals or activate equipment associated with high lead, slackline, or cable skidder systems of logging shall be designed in such a manner whereby two buttons, motions or a combination of these shall be required simultaneously to cause activation of the system. Arrangement of the activating switches shall be such that the operator can transmit signals easily but cannot easily activate a control or command function accidentally.

(10) All receivers intended to be mounted on or in the yarder or similar equipment, and all portable transmitters, shall continue to maintain specified mechanical and electrical performance during and after being subjected to vibration of the magnitude and amplitude as follows:

The equipment shall be vibrated with simple harmonic motion having an amplitude of 0.015" (total excursion 0.03") with the frequency varied uniformly between 10 and 30 Hz and an amplitude of 0.0075" (total excursion 0.015") with the frequency varied uniformly between 30 and 60 Hz. The entire cycle of frequencies for each group (i.e., 10 to 30 cycles and 30 to 60 cycles) shall be accomplished in five minutes and repeated three times. The above motion shall be applied for a total period of thirty minutes in each direction, namely, the directions parallel to both axes of the base and perpendicular to the plane of the base.

(11) All portable transmitters shall continue to maintain specified mechanical and electrical performance after being subjected to a shock test as follows:

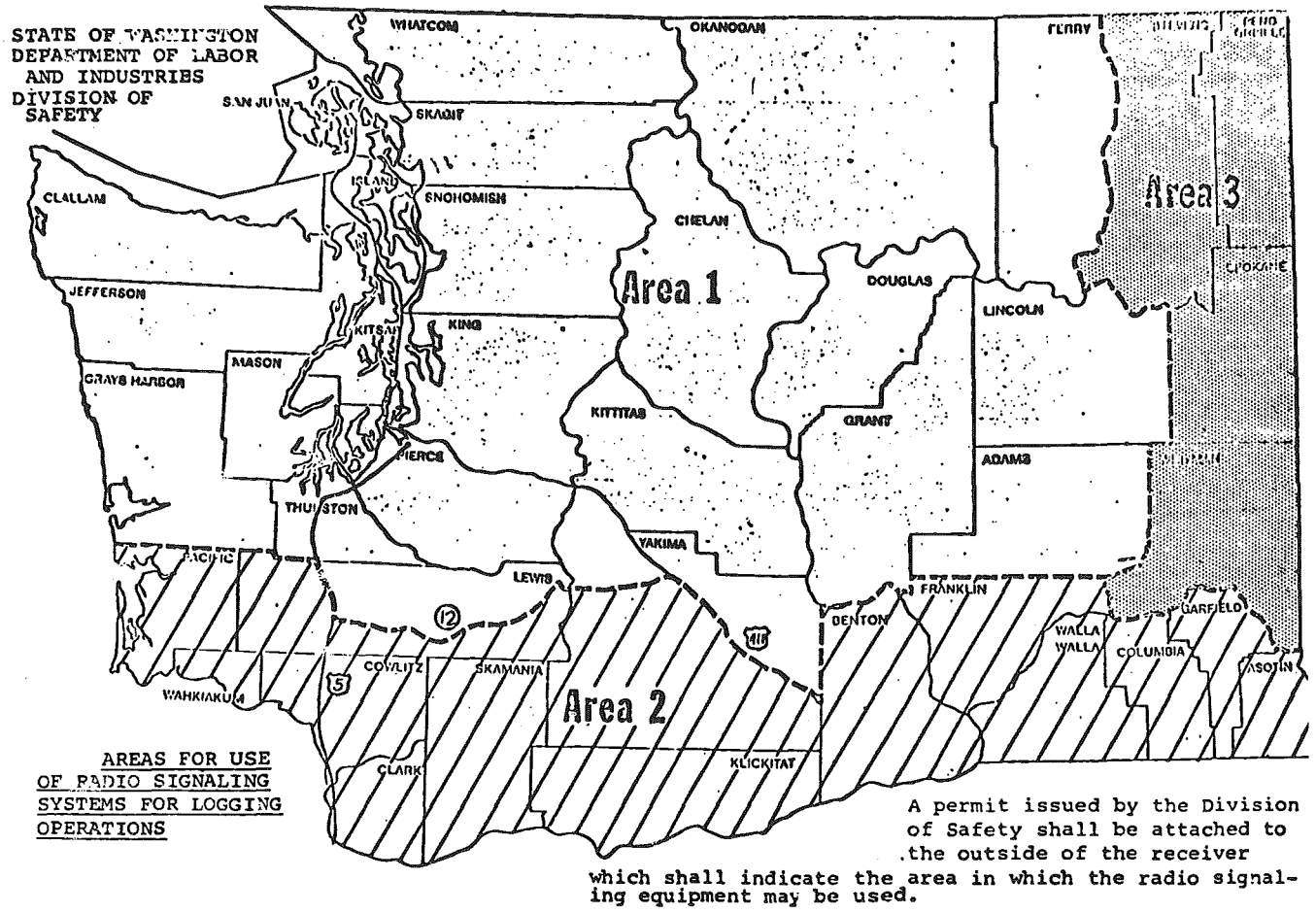
The equipment shall be dropped once on each of five surfaces from a height of four feet onto a smooth concrete floor.

(12) Transmitters operating on carrier frequencies of 154.57 MHz and on 154.60 MHz shall be limited on maximum power output not to exceed 500 mW measured at the antenna terminals.

(13) To minimize the possibility of interference with other signaling systems, the input power of transmitters operating in the 450 MHz range should be limited to only the amount needed to transmit to the receiver of the system effectively.

[Statutory Authority: RCW 49.17.040, 49.17.150 and 49.17.240. 79-10-081 (Order 79-14), § 296-54-607, filed 9/21/79.]

WAC 296-54-990 Map.



[Order 72-14, Map (codified as WAC 296-54-990), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99001 Appendix I--Figure 1--Rigging up, wrapping a guyline.

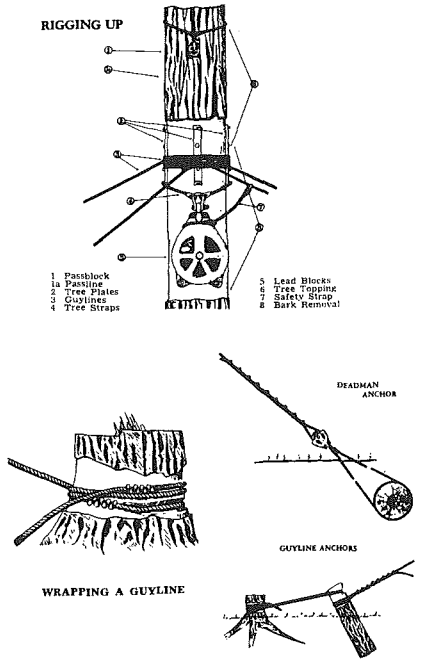


Figure 1.

[Order 72-14, Figure 1 (codified as WAC 296-54-99001), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99002 Appendix I--Figure 2--High lead yarding system.

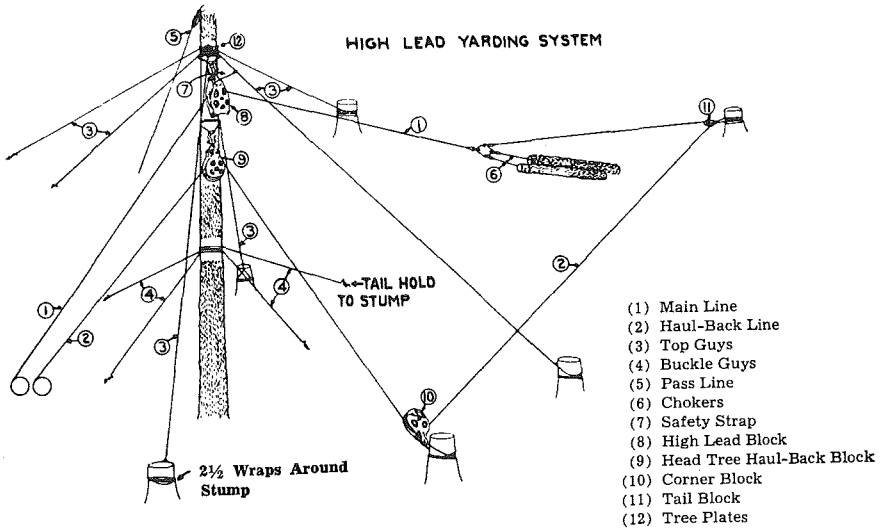
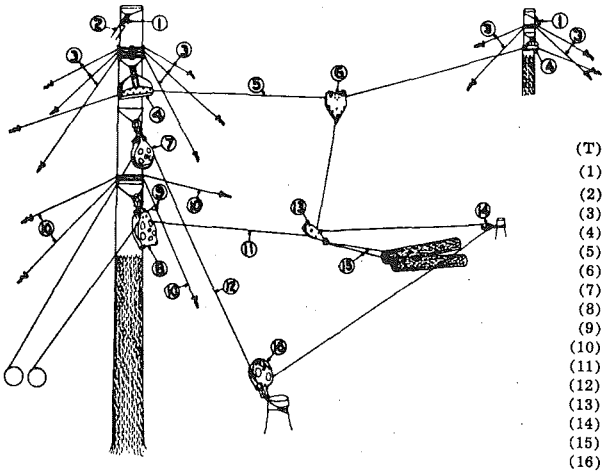


Figure 2.

[Order 72-14, Figure 2 (codified as WAC 296-54-99002), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99003 Appendix I--Figure 3--North Bend yarding system.

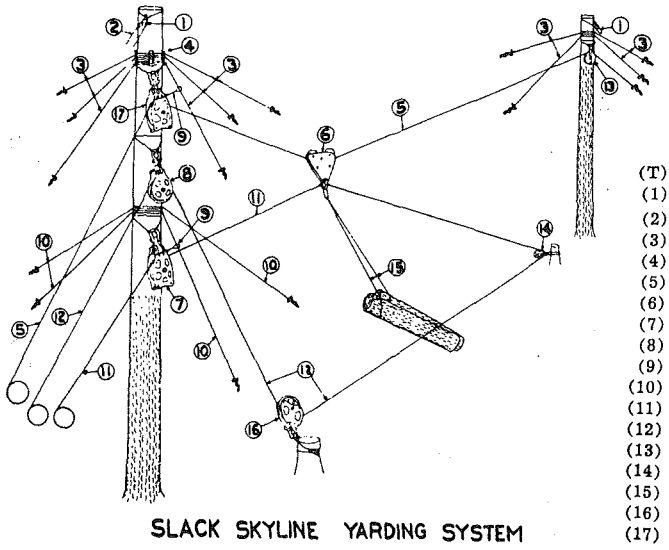


(T) Tail-Hold to Stump
(1) Pass Block
(2) Pass Line
(3) Top Guys
(4) Tree Shoes
(5) Tight Sky Line
(6) Carriage
(7) Head Tree Haul-Back Block
(8) High Lead Block
(9) Safety Strap
(10) Buckle Guys
(11) Main Line
(12) Haul-Back Line
(13) Fall Block
(14) Haul-Back Tail Block
(15) Chokers
(16) Haul-Back Corner Block

Figure 3.

[Order 72-14, Figure 3 (codified as WAC 296-54-99003), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99004 Appendix I--Figure 4--Slack skyline yarding system.



(T) Tail-Hold to Stump
(1) Pass Block
(2) Pass Line
(3) Top Guys
(4) Tree Plates
(5) Slack Sky Line
(6) Carriage
(7) Skidding Block
(8) Head Tree Haul-Back Block
(9) Safety Straps
(10) Buckle Guys
(11) Main Line
(12) Haul-Back
(13) Tree Jack
(14) Haul-Back Tail Block
(15) Chokers
(16) Haul-Back Corner Block
(17) Skyline Block

Figure 4.

[Order 72-14, Figure 4 (codified as WAC 296-54-99004), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99005 Appendix I--Figure 5--Standard signals for tractor logging.

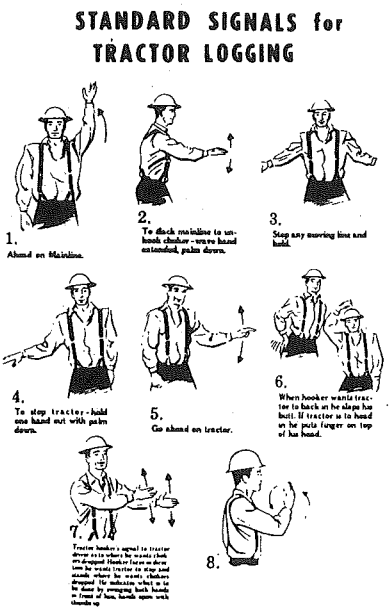


Figure 5.

[Order 72-14, Figure 5 (codified as WAC 296-54-99005), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99006 Appendix I--Figure 6--Standard signals for loading logs.

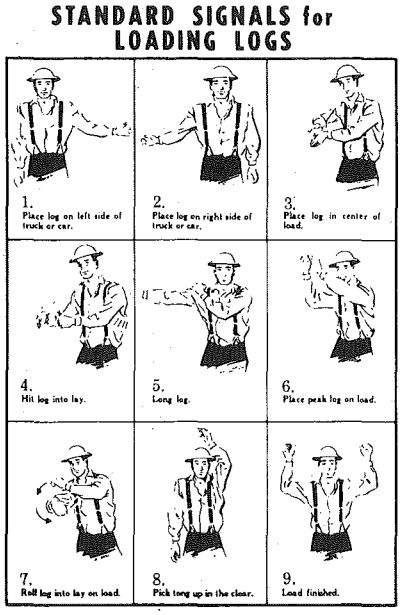


Figure 6.

[Order 72-14, Figure 6 (codified as WAC 296-54-99006), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99007 Appendix I--Figure 7--Heel boom loading.

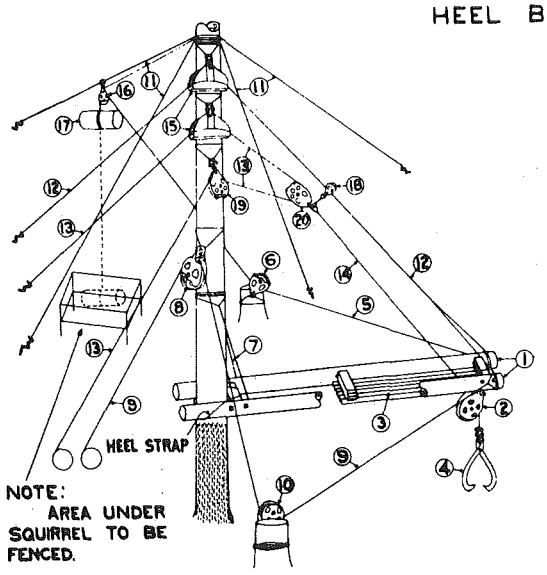


Figure 7.

[Order 72-14, Figure 7 (codified as WAC 296-54-99007), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99008 Appendix I--Figure 8--Guyline loading.

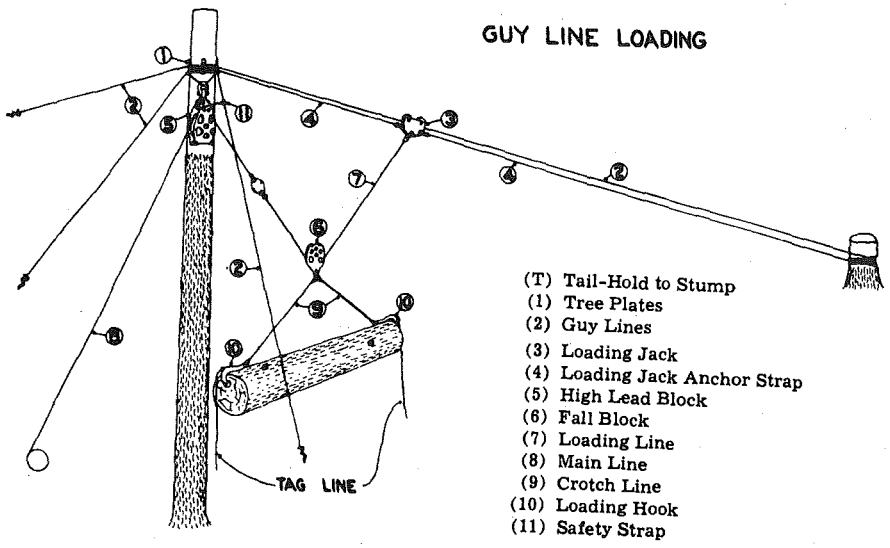


Figure 8.

[Order 72-14, Figure 8 (codified as WAC 296-54-99008), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99009 Appendix I--Figure 9--Hayrack boom loading.

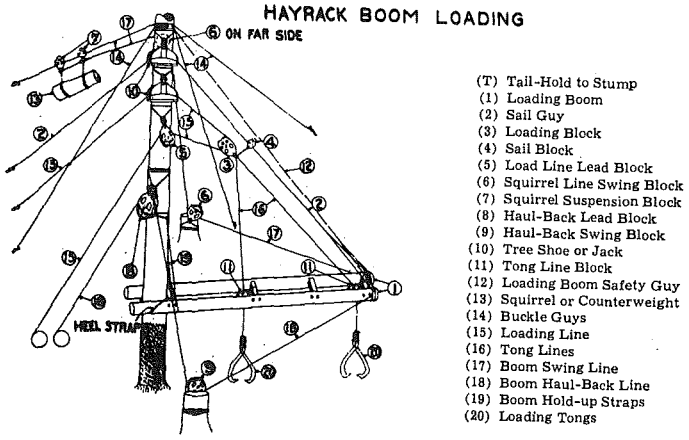


Figure 9.

[Order 72-14, Figure 9 (codified as WAC 296-54-99009), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99010 Appendix I--Figure 10--Spreader bar loading.

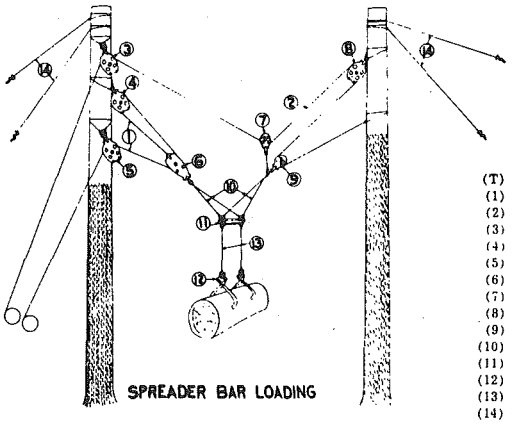
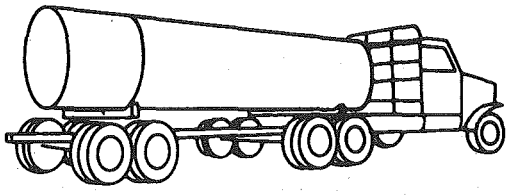


Figure 10.

[Order 72-14, Figure 10 (codified as WAC 296-54-99010), filed 7/31/72, effective 9/1/72.]

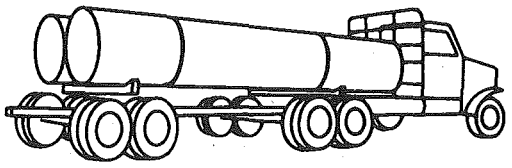
WAC 296-54-99011 Appendix I--Figure 11--Placement and number of binders.

ONE LOG LOAD



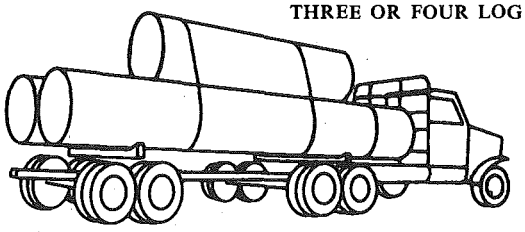
One binder required which shall be secured to rear bunk. Log shall be blocked to prevent it from rolling or shifting.

TWO LOG LOAD



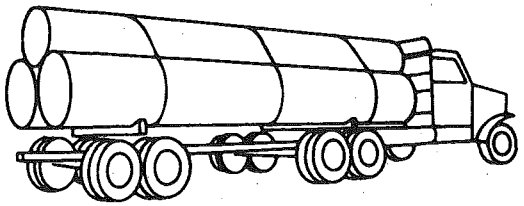
A minimum of two binders required. Logs shall be blocked to prevent them from rolling or shifting.

THREE OR FOUR LOG LOAD FORTY-FOUR FEET OR LESS



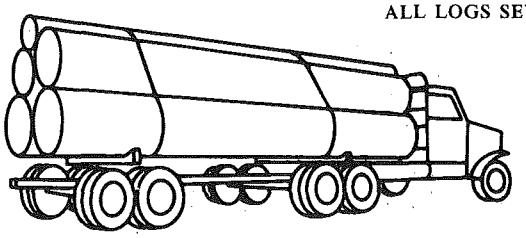
A minimum of two binders required.

THREE OR FOUR LOG LOADS MORE THAN FORTY–FOUR FEET



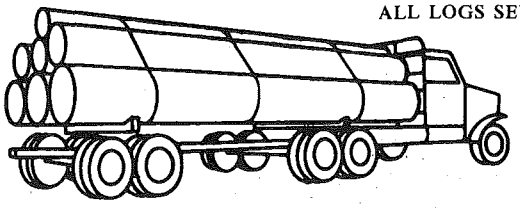
A minimum of three binders required.

FIVE OR SIX LOG LOAD
ALL LOGS SEVENTEEN FEET OR LESS



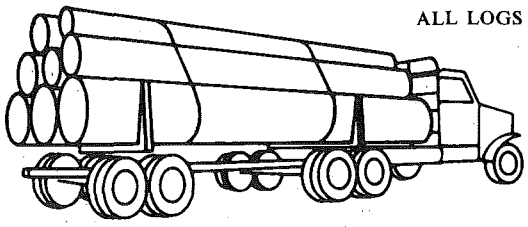
A minimum of two binders required.

SEVEN OR MORE LOG LOAD
ALL LOGS SEVENTEEN FEET OR LESS



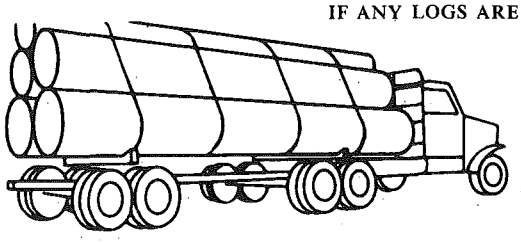
When using chock blocks a minimum of three binders required.

SEVEN OR MORE LOG LOAD
ALL LOGS SEVENTEEN FEET OR LESS



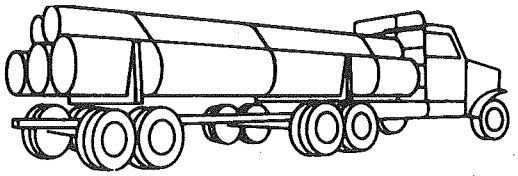
When using stakes a minimum of two binders required.

FIVE OR MORE LOG LOAD
IF ANY LOGS ARE MORE THAN SEVENTEEN FEET



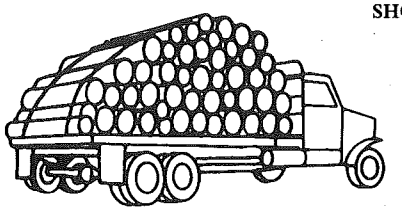
A minimum of four binders are required if using chock blocks.

FIVE OR MORE LOG LOAD
IF ANY LOGS ARE MORE THAN SEVENTEEN FEET



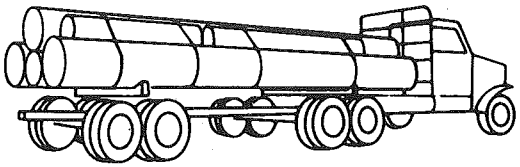
A minimum of three binders are required when using stakes.

SHORT LOGS LOADED CROSSWISE



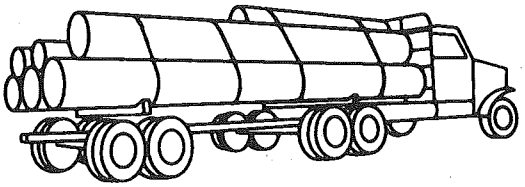
A minimum of two binders are required and two chocks or stakes shall be used on the open end of the truck.

OUTSIDE LOGS OR TOP LOGS



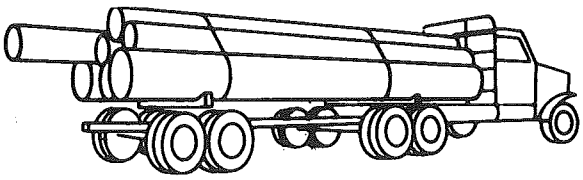
All outside or top logs shall be secured by a binder near but not within 12 inches of each end.

A BINDER SHALL BE NEAR EACH BUNK



Each load shall be secured by having a binder within 6 feet of each bunk except on one log loads.

PROPER SUPPORT FOR LOGS



Not more than approximately one-third the weight of any log shall extend beyond the end of the logs or bunk supporting it.

Figure 11.

PLACEMENT AND NUMBER OF BINDERS

[Order 72-14, Figure 11 (codified as WAC 296-54-99011), filed 7/31/72, effective 9/1/72.]

WAC 296-54-99012 Appendix I--Figure 12--Standard signals for high lead logging.

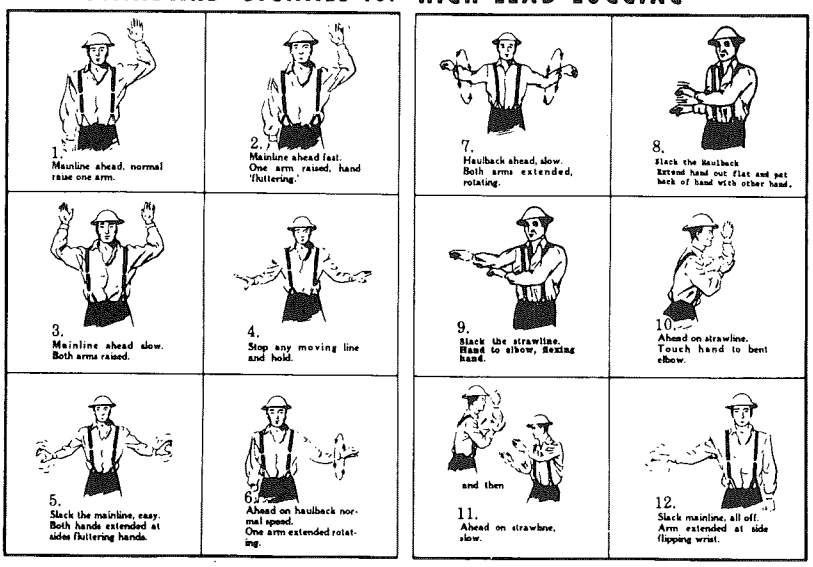


Figure 12.

[Order 72-14, Figure 12 (codified as WAC 296-54-99012), filed 7/31/72, effective 9/1/72.]

Chapter 296-56 WAC

SAFETY STANDARDS--LONGSHORE, STEVEDORE AND RELATED WATERFRONT OPERATIONS

WAC

PART A—GENERAL
296-56-600 Marine terminals.
296-56-60001 Scope and applicability.
296-56-60003 Variance and procedure.
296-56-60005 Definitions.
296-56-60007 Housekeeping.
296-56-60009 Accident prevention program.

PART B—WATERFRONT OPERATIONS
296-56-60011 Slinging.
296-56-60013 Stacking of cargo and pallets.
296-56-60015 Coopering.
296-56-60017 Line handling.
296-56-60019 Standard gauge railroad operations.
296-56-60021 Signals displayed by each maintenance crew.
296-56-60023 Warning flags or lights.
296-56-60025 Signals unobscured.
296-56-60027 Audible warning system.
296-56-60029 Safety observer on railroad switching.
296-56-60031 Warning at road crossing.
296-56-60033 Flying switches.
296-56-60035 Clearance from railroad tracks.
296-56-60037 Car plates.
296-56-60039 Dockboards (bridge plates).
296-56-60041 Log handling.
296-56-60043 Movement of barges and railcars.
296-56-60045 Communication.
296-56-60047 Open fires.

PART C—HAZARDOUS ATMOSPHERES AND MATERIALS
296-56-60049 Hazardous cargo.
296-56-60051 Handling explosives or hazardous materials.
296-56-60053 Hazardous atmospheres and substances.
296-56-60055 Carbon monoxide.
296-56-60057 Fumigants, pesticides, insecticides and hazardous preservatives.

PART D—FIRST AID, OPERATOR QUALIFICATIONS
296-56-60059 First aid and lifesaving facilities.
296-56-60060 First-aid training and certification.
296-56-60062 First-aid kit.
296-56-60065 First-aid station.
296-56-60067 First-aid room.
296-56-60069 Personnel.

PART E—CARGO HANDLING GEAR AND EQUIPMENT
296-56-60071 House falls.
296-56-60073 Miscellaneous auxiliary gear.
296-56-60075 Cargo boards and other type pallet boards.
296-56-60077 Powered industrial trucks.
296-56-60079 General rules applicable to vehicles.
296-56-60081 Multipiece rim wheels.
296-56-60083 Cranes and derricks.
296-56-60085 Crane load and limit devices.
296-56-60087 Winches.
296-56-60089 Conveyors.
296-56-60091 Spouts, chutes, hoppers, bins, and associated equipment.
296-56-60093 Certification of marine terminal material handling devices.
296-56-60095 Advisory crane certification panel.
296-56-60097 Unit proof load test and inspection.
296-56-60098 Examination and inspection of cranes and derricks.
296-56-60099 Hand tools.

PART F—SPECIALIZED TERMINALS
296-56-60101 General.
296-56-60103 Terminals handling intermodal containers or roll-on roll-off operations.
296-56-60105 Grain elevator terminals.
296-56-60107 Terminal facilities handling menhaden and similar species of fish.

PART G—PERSONAL PROTECTION
296-56-60109 Eye protection.
296-56-60110 Respiratory protection.
296-56-60111 Head protection.
296-56-60113 Foot protection.
296-56-60115 Other protective measures.
296-56-60117 Maintenance and load limits.
296-56-60119 Protection from falling.